

BURCHILL WIND PROJECT ADDENDUM

Updated Watercourse, Wetland, and Archaeological Surveys

September 25th 2020

naturalforces

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1 Introduction

On Feb 18, 2020, an Environmental Impact Assessment (EIA) for the Burchill Wind Project (BWP or Project) was registered by the province. The EIA for the Project was submitted by Natural Forces Development Limited Partnership.

The Project proposed a 5-10 turbine wind farm within the boundaries of the City of Saint John that would produce between 20-42 MW of wind energy. Since the submission of the EIA, Natural Forces has confirmed that the Project Size will be set at 42MW therefore requiring 10 turbines. This addendum addresses the updated wetland, watercourse, vegetation and archaeological surveys that have been conducted since the original EIA submission. The Proponent will adhere to the mitigation measures for potential impacts described in section 5 of the original EIA submission. Below, a short overview of wetland, watercourse, rare plant and archeological surveys are provided. Detailed reports are provided in Appendices A and B.

This addendum is submitted by Natural Forces Development Limited Partnership. It is meant to be read in conjunction with the BWP registration EIA document, and the associated addendums submitted on April 15th and September2nd, 2020.

2 Watercourse Surveys

2.1 Field assessment summary

Depth to bedrock across the Project lands is typically only a few centimetres below the surface and the soils atop the bedrock are poorly drained clays. As a result, many watercourses are present on the lands. Watercourses were delineated in the field between 19 August 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020.

Three additional watercourses were identified in the 2020 surveys. Overall, 77 watercourses were identified and delineated within the survey area (Figure 2.1). Most of the watercourses delineated are ephemeral and likely do not support fish and / or fish habitat. Other than Burchill's Brook (BB), Frenchman's Creek (FC), Mill Creek (MC), and Marsh Brook (MB), the only watercourse delineated in the field where fish were observed was Maguires Cove Brook (MCB). Several brook trout (Salvelinus fontinalis) were observed in pools below the outlet from the wetland connected to MCB.

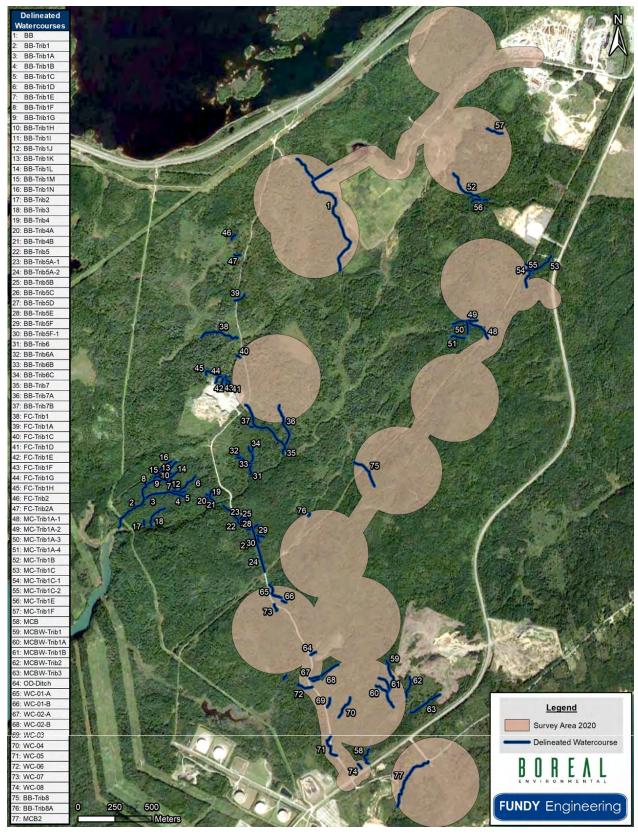


Figure 2-1. Watercourses delineated in the field within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

3 Rare Plant Surveys

3.1 Field assessment summary

A vegetation survey was conducted across the Project site between 10 June 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020 to determine the presence and locations of any rare plant species and rare vegetation communities. All told, 297 plant species were identified on the property. According to ACCDC databases, five of those species are considered rare:

- purple false foxglove (Agalinis purpurea);
- coastal sedge (Carex exilis);
- Wiegand's sedge (Carex wiegandii);
- Loesel's twayblade (Liparis loeselii); and
- cloudberry (Rubus chamaemorus).

The only species considered as May Be At Risk is purple false foxglove. Locally, it appears to be flourishing in disturbed areas across the property, such as along the pipeline right-of-way, all-terrain vehicle trails, and the sides of Burchill Road. The other four species are considered secure. The location and population density of these species are shown in Figure 3.1.

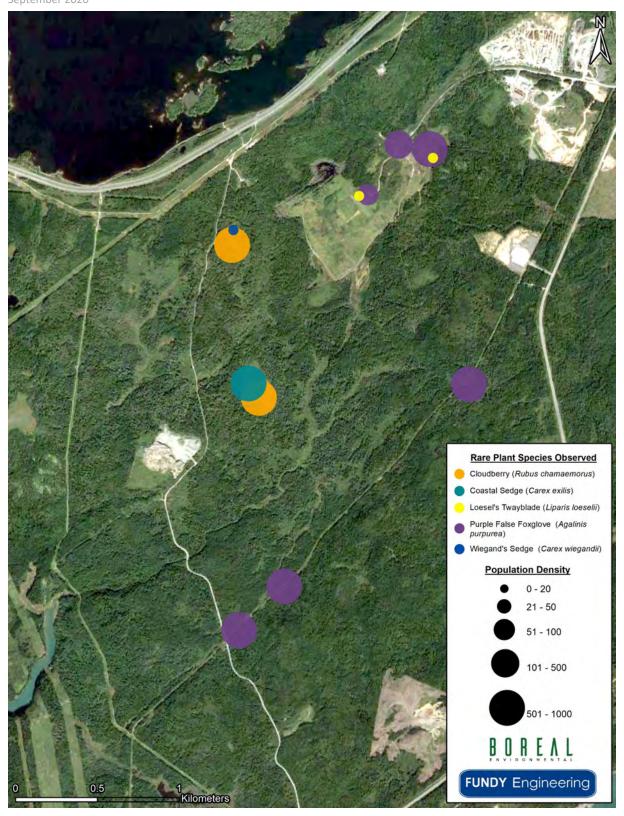


Figure 3-1. Location and population density of rare plants observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

4 Wetland Surveys

4.1 Field assessment summary

Wetlands were delineated in the field between 19 August 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020. These wetlands are shown in Figure 4.1.

4.1.1 Small wetlands

For this Project, wetlands < 0.5 ha in size are considered small wetlands. Detailed paired point analyses (i.e., upland versus wetland) and WFAs were not completed for small wetlands. Instead, information gathered from the large nearby wetlands (i.e., \geq 0.5 ha) were used for delineating the wetland boundaries.

A total of 39 small wetlands with a total area of 6.01 ha were delineated within the study area Overall, there is a fairly even mix of small tall shrub swamps and coniferous swamps located within the study area.

4.1.2 Large wetlands

38 large (i.e., ≥0.5 ha in size) and / or distinctive wetlands (i.e., those <0.5 ha in size, but displayed some noteworthy feature in the field, such as being the source of a perennial tributary, being located in a highly disturbed area, etc., with a combined area of 108.5 ha were delineated on the Project lands. Wetland functional assessments were completed for the 36wetlands within the study area.

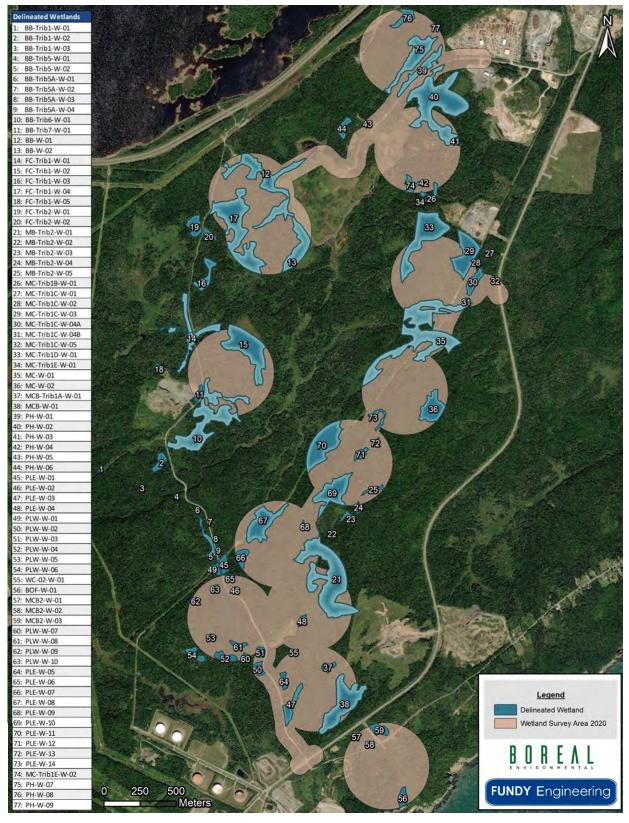


Figure 4-1. Wetlands delineated in the field within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

5 Archaeological Surveys

5.1 Pedestrian survey summary

On August 10th & 11th, 2020, an archaeological pedestrian survey took place at a proposed wind farm west of Lorneville, NB. Due to their proximity to the former marine shoreline, Turbines 2e, 5e, 6e, 7e, 8e, 9e, 11e, 12e & 13e should be considered as holding high potential for the presence of early postglacial archaeology. Therefore, anywhere ground disturbing activities (such as removing tree stumps, using heavy equipment, etc.)will occur, archeological test pits will be excavated on a 5m grid following NB Archaeological Service Unit's Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick (2012), and efforts will be made to minimize the amount of ground disturbing activity.

6 Conclusion

This addendum is meant to be read in conjunction with the registered BWP EIA and previous documents submitted as part of the EIA.

Appendix A

Updated Wetland and Watercourse Report

WATERCOURSE AND WETLAND ASSESSMENTS (REVISED)

Saint John, New Brunswick

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FUNDY Engineering

Serving Our Clients' Needs First

21 September 2020

Project No: 13972

OFFICES IN SAINT JOHN AND CLYDE RIVER



JOB FILE:	13972		
PROJECT TITLE:	Burchill Wind Project		
VERSION	ISSUANCE DATE	PREPARED BY	REVIEWED BY
0.9 (DRAFT)	22 November 2019	MDA	CC, DM
1.0 (FINAL)	29 November 2019	MDA	CC
1.1 (REVISION)	21 September 2020	MDA	CC

FUNDY Engineering

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The Watercourse and Wetland Assessment report completed for the Burchill Wind Project was done in partnership with Boreal Environmental. Boreal Environmental conducted the bulk of the field assessments while Fundy Engineering did the majority of the desktop analyses and report writing.



EXECUTIVE SUMMARY

Fundy Engineering & Consulting Ltd. and Boreal Environmental were contracted by Natural Forces to complete watercourse and wetland assessments for the Burchill Wind Project being proposed for west Saint John, New Brunswick. Between 5 and 10 wind turbines are expected to be constructed on the 1 658 ha parcel of Crown land adjacent to the Spruce Lake Industrial Park yielding between 20 MW and 40 MW of electricity to be connected to Saint John Energy's electrical grid.

The scope of work was to: visit the survey area to identify the presence of watercourses, rare plants, and wetlands; ground-truth, or aerially interpret with spot ground-truthing, the flowpaths of watercourses within the survey area; ground-truth, or aerially interpret with spot ground-truthing, the boundaries of wetlands within the survey area; complete wetland functional assessments for wetlands ≥ 0.5 ha; and identify the location and abundance of rare plants within the survey area. The work was completed between 19 August 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020. within a survey area ~ 390 ha in size.

In addition to wetlands, five general types of habitat were observed across the property. All told, 297plant species were identified on the property. Five rare plants were identified: purple false foxglove (*Agalinis purpurea*); coastal sedge (*Carex exilis*); Wiegand's sedge (*Carex wiegandii*); Loesel's twayblade (*Liparis loeselii*); and cloudberry (*Rubus chamaemorus*). The only species considered as May Be At Risk is purple false foxglove. Locally, it appears to be flourishing in disturbed areas across the property, such as along the pipeline right-of-way, all-terrain vehicle trails, and the sides of Burchill Road. The other four species are considered secure.

Four second order watercourses, Burchill's Brook, Frenchman's Creek, Mill Creek, and Marsh Brook, extend on to the property. Overall, 77 watercourses were identified and delineated on the Project lands. Most of the watercourses are ephemeral and likely do not support fish and / or fish habitat. The watercourses either drain to the Musquash River or the Bay of Fundy.

A total of 39 small wetlands (*i.e.*, < 0.5 ha in size) with a total area of 6.01 ha were delineated on the Project lands. Overall, 38 large (*i.e.*, \geq 0.5 ha in size) and / or distinctive wetlands (*i.e.*, those <0.5 ha in size, but displayed some noteworthy feature in the field, such as being the source of a perennial tributary, being located in a highly disturbed area, *etc.*, with a combined area of 108.5 ha were delineated on the Project lands. Wetland functional assessments were completed for 36 wetlands and results showed 17 ranked as having a higher wetland condition and seven ranked as having a higher wetland risk.



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ACRONYMS

ACCDC: Atlantic Canada Conservation Data Centre

B.Sc.F.: Bachelor of Science in Forestry

BB: Burchill's Brook

cm: centimeter

DFO: Department of Fisheries and Oceans

e.g.: (*exempli gratia*) for example



EP: Environmental Professional

etc.: (et cetera) and so forth

FC: Frenchman's Creek

GPS: Global Positioning System

ha: hectare

HADD: Harmful Alteration, Disruption, or Destruction (of fish or fish habitat)

i.e.: (id est) namely / that is

ID: IDentification

LIDAR: Light Detecting And Ranging

Ltd.: Limited
m: meters

MC: Mill Creek

MCB: Maguires Cove Brook

MCBW: Maguires Cove Brook Wetland

mm: millimeter

MW: MegaWatts

N: North

NBDELG: New Brunswick Department of Environment and Local Government

NBDNRED: New Brunswick Department of Natural Resources and Energy Development

OD: Old Dump

P.Geo.: Professional Geoscientist*P.Tech.*: Professional Technologist*Ph.D.*: Doctorate of Philosophy

PH: Paddys Hill

PID: Property IDentifier

PLE: PipeLine East
PLW: PipeLine West

PMP. Project Management ProfessionalRPF: Registered Professional Forester

sp.: species unknown

Trib: Tributary

USACE: United States Army Corps of Engineers

USDA-NRCS: United States Department of Agriculture – Natural Resources Conservation Service



W: West or Wetland depending on the context

WAWA: Watercourse And Wetland Alteration

WC: WaterCourse

WESP-AC: Wetland Ecosystems Services Protocol for Atlantic Canada

WFA: Wetland Functional Assessment

c: degrees
c: minutes
c: seconds
c: percent
c: registered

>: greater than

≥: greater than or equal to

<: less than

≤: less than or equal to

approximatelyplus or minus

1.0 INTRODUCTION

Fundy Engineering & Consulting Ltd. (Fundy Engineering) was contracted by Natural Forces (*i.e.*, the Client) to complete watercourse and wetland assessments (*i.e.*, the Work) for the Burchill Wind Project being proposed for west Saint John (*i.e.*, Saint John County and the City of Saint John Parish), New Brunswick. Fundy Engineering subcontracted Boreal Environmental (Boreal) to assist with the Work. The property subject of the Work is identified in the New Brunswick Geomatics Information Centre database as Property IDentification (PID) number 00412189 (Figure 1). This report describes the results of the Work completed by Fundy Engineering and Boreal.

1.1 REGULATORY FRAMEWORK

New Brunswick's wetlands and watercourses (i.e., streams) are afforded protection under the Watercourse and Wetland Alteration Regulation [90-80] of the New Brunswick Clean Water Act [S.N.B. 1989, c. C-6.1]. Any proposed alterations within most wetlands and / or streams, or within their 30 m regulated buffer, require permitting through the New Brunswick Department of the Environment and Local Government (NBDELG) Watercourse and Wetlands Alteration (WAWA) Program through a WAWA permit. Any project that has the potential to impact a wetland ≥ 2 hectare (ha) in size, and / or its regulated 30 m buffer, must be registered through the Environmental Impact Assessment Regulation [87-83] of the New Brunswick Clean Environment Act [R.S.N.B. 1973, c. C-6]. New Brunswick's fish-bearing wetlands and watercourses are also afforded protection under Section 35(2) of the Fisheries Act [R.S.C., 1985, c. F-14] administered by the Department of Fisheries and Oceans (DFO), through a Harmful Alteration, Disruption, or Destruction (HADD) of fish habitat authorization. It is the proponent's responsibility to ensure that these features are properly determined through due diligence investigations and that all necessary permits, authorizations, etc. are obtained prior to any impact. Failure to do so could result in fines and remediation if a wetland and / or watercourse is impacted without proper approvals in place.

A *no-net-loss* approach to wetlands, which New Brunswick has adopted, acknowledges that alterations will continue to occur, both naturally and through necessary and beneficial human activities. The approach, which does not consider project economics, applies to all wetlands ≥ 1 ha and strives to preserve wetland functions and values and the benefits that are derived from them. The Federal and Provincial government's wetland preference hierarchy is shown in Figure 2. Avoidance is preferred and is achieved by choosing an alternate project, alternative project design, or alternate development site. Minimization is the reduction of adverse effects of development on wetland functions and values at all project stages to the smallest degree possible and must always be undertaken when impacting a wetland. Compensation, which 'makes up' for unavoidable wetland loss or damage, is required for any and all wetland function and value that is impacted by a project. Wetland compensation ratios are established by the NBDELG. A Wetland Functional Assessment (WFA) may also be required to determine wetland functions, values, and benefits and assess the required compensation ratio.





Figure 1. Aerial photograph showing the location of PID 00412189 in west Saint John, New Brunswick being considered for the Burchill Wind Project.

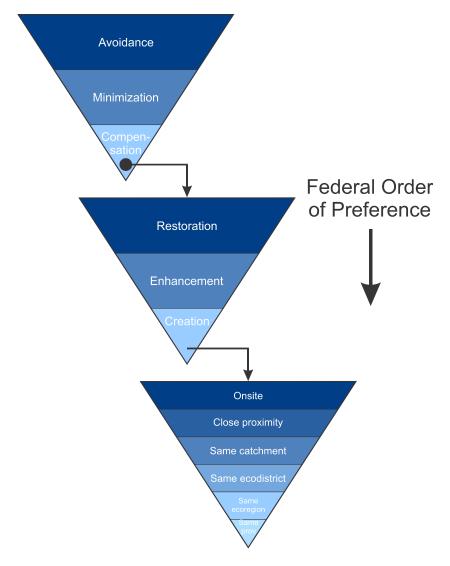


Figure 2. Federal and Provincial Government's preference hierarchy. Based on reports by *Bond et al.* [1992], *Environment Canada* [1996], *Milko* [1998], *Cox and Grose* [2000], and the *Interagency Workshop on Wetland Restoration* [Undated].

1.1.1 Definitions

As defined under the New Brunswick *Clean Water Act* [S.N.B. 1989, c. C-6.1], a watercourse:

means the full width and length, including the bed, banks, sides and shoreline, or any part, of a river, creek, stream, spring, brook, lake, pond, reservoir, canal, ditch or other natural or artificial channel open to the atmosphere, the primary function of which is the conveyance or containment of water whether the flow be continuous or not.

The NBDELG considers watercourses to include any incised channel ≥ 0.5 m wide that displays a rock or soil bed.



As defined under the New Brunswick *Clean Environment Act* [R.S.N.B. 1973, c. C-6], a wetland:

means land that (a) either periodically or permanently, has a water table at, near or above the land's surface or that is saturated with water, and (b) sustains aquatic processes as indicated by the presence of hydric soils, hydrophytic vegetation and biological activities adapted to wet conditions.

1.2 SCOPE OF WORK

The Burchill Wind Project is being proposed for a portion of the 1 658 ha parcel of Crown land adjacent to the Spruce Lake Industrial Park (*i.e.*, PID 00412189; Figure 1). It is expected that 5 to 10 turbines (Figure 3) with a total installed generating capacity between 20 MegaWatts (MW) and 42 MW will be erected at the site and subsequently be connected to Saint John Energy's electrical grid. As per the Environmental Impact Assessment Regulation [87-83] of the New Brunswick *Clean Environment Act* [R.S.N.B. 1973, c. C-6], any wind farm project exceeding 3 MW of installed capacity must undergo EIA review. Part of the assessment of potential environmental impacts of the Burchill Wind Project includes the assessment of watercourses and wetlands.

The scope of work was to:

- visit the survey area to identify the presence of watercourses, rare plants, and wetlands;
- ground-truth, or aerially interpret with spot ground-truthing, the flowpaths of watercourses within the survey area;
- ground-truth, or aerially interpret with spot ground-truthing, the boundaries of wetlands within the survey area;
- complete wetland functional assessments for wetlands ≥ 0.5 ha;
- identify the location and abundance of rare plants within the survey area; and
- generate a report, complete with maps, describing the results of the watercourse delineations, rare plant survey, wetland delineations, and wetland functional assessments.





Figure 3. Aerial photograph showing up to ten turbines on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project. NOTE: the location of the turbines shown is tentative and subject to change based on wind data analysis and field conditions.

2.0 METHODOLOGY

2.1 WATERCOURSE DELINEATIONS

2.1.1 Desk-Top Assessment

A desk-top assessment of watercourses that may be present at the site is completed by reviewing GeoNB's online maps. The GeoNB database includes watercourses that appear on 1:10 000 scale maps. The watercourses included are those that are on file with the NBDELG and the New Brunswick Department of Natural Resources and Energy Development (NBDNRED). Topographic and LIght Detection And Ranging (LIDAR) maps are also reviewed to determine where potential watercourses may be present on the site.

2.1.2 Field Assessment

Watercourses are delineated in the field by first walking the perimeter of the subject area. Potential watercourses are flagged at that time. Later, the potential watercourses are followed into the subject area to confirm their identification and determine their extent. Generally, location measurements (*i.e.*, latitude and longitude) are made every 5 m to 10 m along the flowpath. Assessment of watercourses includes collecting the following information:

- average width;
- average depth;
- substrate materials:
- flow conditions (i.e., ephemeral or perennial);
- streamside vegetation; and
- fish presence.

2.2 RARE PLANT SURVEY

The Atlantic Canada Conservation Data Centre (ACCDC) maintains a comprehensive list of plant and animal species for New Brunswick. That list includes a conservation status rank and legal status. The conservation status rank is assessed by the ACCDC in collaboration with other experts.

A rare plant survey is done to determine the presence and locations of any rare plant species and rare vegetation communities. Random meander searches are typically conducted throughout a growing season because the best time to identify specific plants varies (*e.g.*, budding stage, flowering stage, moisture conditions, maturity, *etc.*). During the searches, a complete list of vegetation in the area is compiled.

The conservation ranks for species identified in the field are obtained from the ACCDC database. Those ranks are then used to assess the rarity of the species observed. The locations of any rare plants observed in the field are recorded along with their approximate density.



2.3 WETLAND DELINEATIONS

2.3.1 Desk-Top Assessment

A desk-top assessment of wetlands that may be present at the site is completed by reviewing GeoNB's online maps. The GeoNB database includes wetlands that appear on 1:10 000 scale maps. The wetlands included are those that are on file with the NBDELG and the NBDNRED. Topographic and LIDAR maps are also reviewed to determine where potential wetlands may be present on the site.

2.3.2 Field Assessment

Fundy Engineering's process for delineating a wetland boundary is based upon the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual [*Environmental Laboratory*, 1987], the *USACE* [2008] regional supplement, and *Tiner* [1999]. We base our assessments on the New Brunswick *Clean Environment Act* [R.S.N.B. 1973, c. C-6] definition of a wetland (*i.e.*, Section 1.1.1).

We use three criteria for delineating wetland boundaries. Based on this approach, an area is deemed a wetland based on the presence of:

- wetland hydrology;
- wetland hydrophytic vegetation; and
- wetland hydric soils.

The three criteria noted above are not required to be perennially present for an area to be deemed a wetland. For example, wetland hydrology may not exist during a drought or vegetation may not be present if the wetland has been impacted by infilling. The three criteria are discussed in detail below.

2.3.2.1 Hydrology

The *Environmental Laboratory* [1987], defines wetland hydrology as comprising all hydrological characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season (*i.e.*, the period between the last spring killing frost and the first fall killing frost, which is dependent on local climate and geography).

There are primary and secondary hydrological indicators and areas deemed as wetland should have one primary and two or more secondary indicators present in conjunction with the other two wetland criteria (*i.e.*, wetland hydrophytic vegetation and wetland hydric soils).

Primary indicators of wetland hydrology may include, but are not limited to:

- ponded water;
- saturated soils;
- water marks on woody vegetation, fixed objects, etc.;
- drift lines:



- sediment and debris deposits on the surface, vegetation, etc.; and
- drainage patterns, such as channels, scours, etc.

In addition to the primary indicators, there are a variety of secondary wetland hydrology indicators. Secondary indicators include, but are not limited to:

- oxidized root channels in the upper 30 cm of the soil profile;
- water-stained leaves:
- local soil survey hydrology data;
- the faculative-neutral test of the vegetation as described in detail by Environmental Laboratory [1987]; and
- salt deposits, mud casts, and surface soil cracks.

2.3.2.2 Hydric Soils

Hydric soils are defined as those that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part [*USDA-NRCS*, 2003]. Primary indicators of wetland hydric soils may include, but are not limited to, the presence of:

- organic soils (i.e., histosols), such as peats and mucks;
- histic epipedons;
- sulfidic material (i.e., emits an odour of rotten eggs);
- aquic or peraquic moisture regimes (i.e., soils saturated by groundwater);
- reducing conditions;
- soil colours indicative of hydric soils (e.g., gleyed soils, bright mottles, low matrix chroma, etc.);
- iron and manganese concretions;
- high organic matter in the surface horizon;
- streaking of subsurface horizons by organic matter; and
- organic pans.

Hydric soils are assessed in the field by excavating test pits using a shovel. Notes on the soil horizons present and the depth located within the pit(s) are noted. The matrix colour and mottle colour, if present, of the soils are determined using Munsell Soil Colour Charts [Gretag-Macbeth, 2000].

2.3.2.3 Hydrophytic Vegetation

Hydrophytic vegetation is defined as the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanent or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present [*Environmental Laboratory*, 1987]. Hydrophytic vegetation should be the dominant plant type and is characterized by the dominant species that comprises the plant community.



2.3.2.4 Boundary Delineation

The wetland perimeter is delineated by assessing the relationship between hydrological indicators, hydrophytic vegetation, and hydric soils. Each datum point in the field, spaced about 5 m apart, is collected using a handheld Global Positioning System (GPS) unit with an estimated accuracy rating of ± 3 m.

2.4 WETLAND FUNCTIONAL ASSESSMENTS

For this Work, WFAs were only completed on wetlands ≥ 0.5 ha in size and / or those wetlands considered distinctive.

2.4.1 WESP-AC Model

The NBDELG requires that a WFA be conducted using the Wetland Ecosystem Services Protocol for Atlantic Canada (WESP-AC), which is a standardized method for assessing some of the important natural functions of all types of wetlands in Atlantic Canada. WESP-AC generates normalized scores (*i.e.*, 0 to 10) and ratings (*i.e.*, Lower, Moderate, and Higher) for each function / attribute of a wetland and does so in a consistent and transparent manner. The scores and ratings are used by the Regulator(s) to inform their decisions regarding avoidance, minimization, and replacement.

The, "NB_WESP-AC_Nontidal_Calculator_SingleSite_23July2018_protected.xlsx" model was used for the wetland functional assessments described herein [NBDELG, 2018]. The NonTidal, versus the Tidal, model was chosen because the wetlands are located above the head of tide. The supplementary data contained in Supplnfo_Nontidal_WESP-AC.xlsx file were also used for the assessment.

Non-tidal wetlands are vegetated wetlands that do not experience a fluctuation in their surface water levels at any time of the year as a result of oceanic tides. They are commonly categorized as a swamp, marsh, bog, or fen.

After completing a desk-top assessment and a field assessment, input data are used by the logic models programmed within the WESP-AC Excel® spreadsheets to calculate normalized scores and ratings for each of the wetland attributes summarized in Table 1.

Table 1. Wetland functions and other attributes scored by NonTidal WESP-AC in Atlantic Canada. After *NBDELG* [2018].

Function or Attribute	Definition	Potential Benefits	
Hydrologic Functions			
Water storage and delay	The effectiveness for storing runoff or delaying the downslope movement of surface water for long or short periods	Flood control and maintain ecological systems	
Stream flow support	The effectiveness for contributing water to streams especially during the driest part of a growing season	Support fish and other aquatic life	
Water Quality Maintenance Functions			
Water cooling	The effectiveness for maintaining or reducing temperature of downslope waters	Support coldwater fish and other aquatic life	



Function or Attribute	Definition	Potential Benefits
Sediment retention and stabilization	The effectiveness for intercepting and filtering suspended inorganic sediments, thus allowing their deposition, as well as reducing energy of waves and currents, resisting excessive erosion, and stabilizing underlying sediments or soil	Maintain quality of receiving waters and protect shoreline structures from erosion
Phosphorus retention	The effectiveness for retaining phosphorus for long periods (> 1 growing season)	Maintain quality of receiving waters
Nitrate removal and retention	The effectiveness for retaining particulate nitrate and converting soluble nitrate and ammonium to nitrogen gas while generating little or no nitrous oxide (a potent greenhouse gas)	Maintain quality of receiving waters
Organic nutrient export	The effectiveness for producing and subsequently exporting organic nutrients (mainly carbon), either particulate or dissolved	Support food chains in receiving waters
Ecological Habitat Functions		
Fish habitat	The capacity to support an abundance and diversity of native fish (both anadromous and resident species)	Support recreational and ecological values
Aquatic invertebrate habitat	The capacity to support or contribute to an abundance or diversity of invertebrate animals, which spend all or part of their life cycle underwater or in moist soil and includes dragonflies, midges, clams, snails, water beetles, shrimp, aquatic worms, and others	Support salmon and other aquatic life and maintain regional biodiversity
Amphibian and reptile habitat	The capacity to support or contribute to an abundance or diversity of native frogs, toads, salamanders, and turtles	Maintain regional biodiversity
Waterbird feeding habitat	The capacity to support or contribute to an abundance or diversity of waterbirds that migrate or winter, but do not breed in the region	Support hunting and ecological values and maintain regional biodiversity
Waterbird nesting habitat	The capacity to support or contribute to an abundance or diversity of waterbirds that nest in the region	Maintain regional biodiversity
Songbird, raptor, and mammal habitat	The capacity to support or contribute to an abundance or diversity of native songbird, raptor, and mammal species and functional groups, especially those that are most dependent on wetlands or water	Maintain regional biodiversity
Native plant habitat and pollinator habitat	The capacity to support or contribute to a diversity of native, hydrophytic, vascular plant species, communities, and / or functional groups, as well as the pollinating insects linked to them	Maintain regional biodiversity and food chains
Public use and recognition*	Prior designation of the wetland, by a natural resource or environmental agency, as some type of special protected area; also, the potential and actual use of a wetland for low-intensity outdoor recreation, education, or research	Commercial and social benefits of recreation and protection of prior public investments

NOTES:

^{*}A wetland benefit that is not considered a function



2.4.2 Desk-Top Assessment

A desk-top assessment is completed prior to visiting the wetland. Aerial images and data from various sources, such as Google Earth, are consulted in order to answer 38, mostly multiple-choice, questions about the wetland.

2.4.3 Field Assessment

After the desk-top assessment is completed, the wetland is visited. Field observations and discussions with the landowner(s) are used to answer 66 specific questions related to the wetland. A stressor datasheet is also completed.

2.5 ASSESSORS

Matt Alexander, *Ph.D.*, *P.Geo.*, *EP* and Derrick Mitchell, *B.Sc.F.*, *R.P.F.* completed the watercourse and wetland assessments described herein. Derrick took the WESP-AC training in July 2016 in Fredericton, New Brunswick where the instructor was Dr. Paul Adamus. Matt attended the WESP-AC training session held on 12 and 13 September 2016 in Aulac, New Brunswick where the instructor was Dr. Paul Adamus. Derrick and Matt have both completed hundreds of wetland delineations in New Brunswick, Nova Scotia, and Prince Edward Island.



3.0 SITE DESCRIPTION

3.1 SURVEY AREA

Based on preliminary turbine sighting studies, Natural Forces identified lands where watercourse and wetland surveys were required (*i.e.*, the survey area). Initially, this included the following:

- 30 m buffers along roads required to access turbine sites during construction and operation;
- 30 m buffers along powerline easements;
- 30 m buffers around substations and ancillary equipment; and
- > 150 m buffers around turbine bases.

Following discussions with the Regulatory Authorities (*i.e.*, representatives with the NBDELG, NBDNRED, and the Canadian Wildlife Institute), it was agreed that preliminary 150 m buffers would be surveyed in 2019 and that area would be extended to 300 m, as per the Crown Land Policy, around the proposed turbine bases for the 2020 surveys. Therefore, the 2019 Work involved ground-truthing delineation exercises within the initial survey area and aerial photo interpretation and LIDAR interpretation with spot ground-truthing delineation exercises within the expanded survey area (*i.e.*, from 150 m to 300 m from the turbine bases). Additional ground-truthing delineation exercises were done in 2020 to confirm the aerial interpretation with spot ground-truthing delineation exercises.

Figure 4 shows the 2020 survey areas on the Project lands. The total survey area of lands where ground-truthing delineation exercises were completed is approximately 390 ha.





Figure 4. Aerial photograph showing the survey areas on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

3.2 HABITAT TYPES OBSERVED

The survey area is located in the Fundy Coastal Ecodistrict of the Fundy Coast Ecoregion [Ecosystem Classification Working Group, 2007]. The Fundy Coast Ecoregion spans the entire southern coastline of New Brunswick along the Bay of Fundy from the east side of Passamaquoddy Bay to the east side of Shepody Bay. A mainly coniferous forest, dominated by red spruce, balsam fir, black spruce, white spruce, and tamarack, thrives in the cool, moist climate of the Ecoregion. Cedar is a dominant species in the limestone-derived soils around Saint John. The most common hardwood species include heart-leaved birch, mountain ash, red maple, and some yellow birch. The Fundy Coast Ecoregion also has a rich diversity of wetlands.

In addition to wetlands, five general types of habitat were observed across the Project site. The dominant species observed within each habitat are summarized in Table 2. Photographs are provided in Figure 5 through Figure 13.

Table 2. Habitat types observed, including dominant species, on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Habitat Type	Stratum	Dominant Species
Type 1 – Shrub land	Trees	No trees
	Shrubs	Green alder, 30%White meadowsweet, 30%Bebb's willow, 25%Shrubby cinquefoil, 5%
	Herbs	Meadow hawkweed, 10%Canada goldenrod, 5%
	Moss	No moss
Type 2 – Mixed softwood aged 50 to 100yrs+	Trees	Balsam fir, 40%Red spruce, 25%Heart-leaved birch, 15%
	Shrubs	Balsam fir, 5%
	Herbs	 Common wood fern, 5% Mountain wood fern, 5% Wild-Lily-of-the-valley, 5% Wild sarsaparilla, 2%
	Moss	Red-stemmed feather moss, 25%Three-toothed whipwort, 25%
Type 3 - Dry with rocky outcrops	Trees	 Red spruce, 40% Balsam fir, 25% Eastern white cedar, 5% Heart-leaved birch, 5%
	Shrubs	 Heart-leaved birch, 10% Balsam fir, 5% Eastern white cedar, 5% Red spruce, 5%



Habitat Type	Stratum	Dominant Species
	Herbs	Bunchberry, 5%Wild sarsaparilla, 2%
	Moss	Red-stemmed feather moss, 60%Reindeer lichen, 20%
	Trees	Red spruce, 75%Balsam fir, 10%
Type 4 – Dry with mixed	Shrubs	Sheep laurel, 5%Red spruce, 2%
softwood and rocky outcrops	Herbs	Bunchberry, 5%
	Moss	Red-stemmed feather moss, 50%Three-toothed whipwort, 10%Dicranum sp., 5%
	Trees	Red spruce, 60%Balsam fir, 15%Heart-leaved birch, 5%Tamarack, 5%
Type 5 – Mixed softwood	Shrubs	 Red spruce, 20% Mountain holly, 10% Balsam fir, 5% Sheep laurel, 2% Late lowbush blueberry, 1%
	Herbs	No herbs
	Moss	Red-stemmed feather moss, 90%Reindeer lichen, 5%



Figure 5. Photograph showing an example of shrub land habitat (*i.e.*, Type 1) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 6. Photograph showing another example of shrub land habitat (*i.e.*, Type 1) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 7. Photograph showing an example of the mixed softwood aged 50 to 100+ years habitat (*i.e.*, Type 2) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 8. Photograph showing another example of the mixed softwood aged 50 to 100+ years habitat (*i.e.*, Type 2) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 9. Photograph showing an example of dry with rocky outcrops habitat (*i.e.*, Type 3) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 10. Photograph showing an example of dry with rocky outcrops habitat (*i.e.*, Type 3) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 11. Photograph showing an example of dry with mixed softwood and rocky outcrops habitat (*i.e.*, Type 4) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 12. Photograph showing another example of dry with mixed softwood and rocky outcrops habitat (*i.e.*, Type 4) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.



Figure 13. Photograph showing an example of mixed softwood habitat (*i.e.*, Type 5) observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

4.0 WATERCOURSE DELINEATIONS

4.1 DESK-TOP ASSESSMENT

GeoNB mapping shows four named watercourses within the boundaries of the overall site (Figure 14):

- Burchill's Brook;
- Frenchman's Creek;
- Mill Creek; and
- Marsh Brook.

All are second order watercourses. Burchill's Brook and Frenchman's Creek fall within the Musquash River watershed whereas Mill Creek and Marsh Brook drain directly to the Bay of Fundy. Although not confirmed through field assessments, it is believed that the main stems of all these watercourses are salmonid-bearing and support fish habitat.

There are also several unnamed watercourses that appear within the GeoNB mapping database (Figure 14).



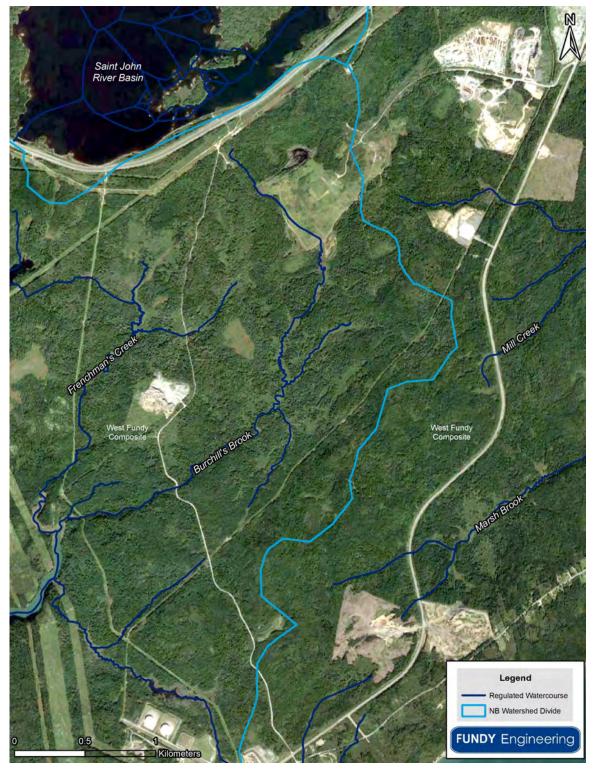


Figure 14. Mapped watercourses present on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

4.2 FIELD ASSESSMENTS

Depth to bedrock across the Project lands is typically only a few centimetres below the surface and the soils atop the bedrock are poorly drained clays. As a result, many watercourses are present on the lands. Watercourses were delineated in the field between 19 August 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020. Those watercourses are shown in Figure 15 and Table 3 summarizes their characteristics. Photographs of the watercourses are provided in Appendix I, which includes all photographs taken during the field program.

Overall, 77 watercourses were identified and delineated within the survey area. Most of the watercourses delineated are ephemeral and likely do not support fish and / or fish habitat. Other than Burchill's Brook (BB), Frenchman's Creek (FC), Mill Creek (MC), and Marsh Brook (MB), the only watercourse delineated in the field where fish were observed was Maguires Cove Brook (MCB). Several brook trout (Salvelinus fontinalis) were observed in pools below the outlet from the wetland connected to MCB.



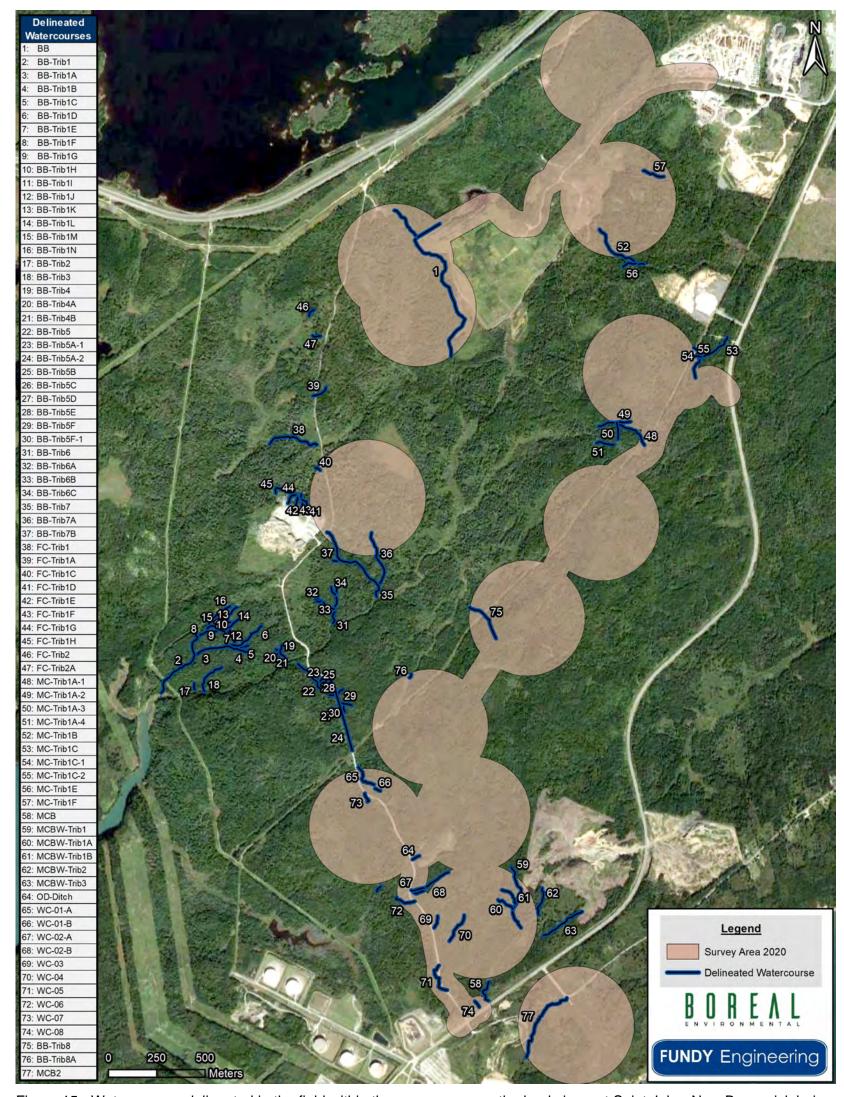


Figure 15. Watercourses delineated in the field within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Table 3. Characteristics of the watercourses identified within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Map ID	Unique ID	Width (cm)	Depth (cm)	Substrate	Flow	Streamside Vegetation	Fish Presence (Observed / Possible / Unlikely)	Comments
1	BB	100 to 300	15 to 100+	Cobble with sand and gravel	Perennial	Good	Observed	
2	BB-Trib1	60 to 180	5 to 15	Exposed bedrock and angular cobble to boulders with heavy siltation in between	Perennial	Excellent	Possible	Considerable woody debris
3	BB-Trib1A							
4	BB-Trib1B							
5	BB-Trib1C							
6	BB-Trib1D							
7	BB-Trib1E							
8	BB-Trib1F							
9	BB-Trib1G	15 to 90	5 to 15	Exposed bedrock and angular rocks with heavy siltation	Ephemeral	Excellent	Unlikely	Woody debris and overhanging vegetation are extensive
10	BB-Trib1H	13 10 70	3 10 13	in between	Lpricificial	LACCIICIT	Offlikely	woody debris and overnatiging vegetation are extensive
11	BB-Trib1I							
12	BB-Trib1J							
13	BB-Trib1K							
14	BB-Trib1L							
15	BB-Trib1M							
16	BB-Trib1N							
17	BB-Trib2	10 to 15	5	Silt and some exposed bedrock	Ephemeral	Good	Unlikely	At the top of the slope it flows for about 30 m before gong subterranean and the channel is lost
18	BB-Trib3	20 to 30	10	Silt and some exposed bedrock	Ephemeral	Fair	Unlikely	Flows through an open forest area that has a large deer / moose hunting blind adjacent to it
19	BB-Trib4							
20	BB-Trib4A	10 to 20	5 to 10	Silt and exposed bedrock	Ephemeral	Good	Unlikely	Deeply incised channels and flows down a steep bank to Burchill's Brook
21	BB-Trib4B							
22	BB-Trib5	30 to 120	10 to 25	Silt with some exposed angular cobble and boulders	Perennial	Good	Unlikely	Wetlands and groundwater are the source of this watercourse
23	BB-Trib5A-1	30	5 to 10	Silt	Ephemeral	Good	Unlikely	
24	BB-Trib5A-2	60 to 150	10 to 40	Silt and angular cobble and boulders	Perennial	Good	Unlikely	Ditch along the eastern side of Burchill Road that collects water from several watercourses and wetlands
25	BB-Trib5B							
26	BB-Trib5C	30	5 to 10	Silt	Perennial	Good	Unlikely	Drains water from eastern side of Burchill Road to the western side
27	BB-Trib5D						-	
28	BB-Trib5E	30	5 to 10	Silt	Ephemeral	Good	Unlikely	
29	BB-Trib5F	45	5	Silt	Ephemeral	Good	Unlikely	Flows along an old woods road (i.e., within former wheel ruts)
30	BB-Trib5F1	30	5 to 10	Silt	Ephemeral	Good	Unlikely	
31	BB-Trib6							
32	BB-Trib6A	001 50	10	CU	F	0 1	11.19.1	
33	BB-Trib6B	30 to 50	10	Silt	Ephemeral	Good	Unlikely	
34	BB-Trib6C							
35	BB-Trib7	30 to 250	5 to 30	Mostly silt with pebbles to boulders intermixed	Perennial	Excellent	Possible	Considerable woody debris; picks up groundwater along its highly sinuous flowpath



Map ID	Unique ID	Width (cm)	Depth (cm)	Substrate	Flow	Streamside Vegetation	Fish Presence (Observed / Possible / Unlikely)	Comments
36	BB-Trib7A	10 to 60	5 to 15	Silt with some exposed angular cobble to boulders	Ephemeral	Excellent	Unlikely	A small forested wetland is the source, but collects groundwater as it flows and is subterranean in some locations
37	BB-Trib7B	10 to 50	5 to 15	Silt	Ephemeral	Excellent	Unlikely	Collects water from old-growth cedar stand; considerable woody debris
38	FC-Trib1	30 to 200	10 to 50	Silt with some cobble to boulders in steeper gradients	Perennial	Fair	Likely	Drains pond with former beaver activity
39	FC-Trib1A	10 to 50	5 to 10	Silt	Ephemeral	Fair	Unlikely	
40	FC-Trib1C							
41	FC-Trib1D							
42	FC-Trib1E	10 to 00	F to 10	Cill	F=h-=====	F a a II a m t	Undian.	Drains surfacewater runoff and groundwater from upgradient quarry / gravel pit; excellent
43	FC-Trib1F	10 to 80	5 to 10	Silt	Ephemeral	Excellent	Unlikely	streamshade and considerable woody debris
44	FC-Trib1G							
45	FC-Trib1H							
46	FC-Trib2			To be confirmed in Spring 2020	Ephemeral		Unlikely	
47	FC-Trib2A			To be confirmed in Spring 2020	Ephemeral		Unlikely	
48	MC-Trib1A-1						·	
49	MC-Trib1A-2							
50	MC-Trib1A-3	100	5 to 10	Cobble and gravel	Ephemeral	Good	Unlikely	
51	MC-Trib1A-4							
52	MC-Trib1B	75 to 100	10 to 20	Sand and silt	Perennial	Good	Possible	
53	MC-Trib1C	30 to 250	5 to 40	Silt and angular cobbles and boulders	Perennial	Excellent	Possible	Considerable woody debris; wetlands are its source
54	MC-Trib1C-1	30 to 45	5 to 25	Silt and angular gravel to boulders	Ephemeral	Good	Unlikely	
55	MC-Trib1C-2	30 to 45	5 to 25	Silt and angular gravel to boulders	Ephemeral	Good	Unlikely	Drains a large wetland to Mill Creek; flows across the Pipeline ROW road
56	MC-Trib1E	30 to 45	5 to 25	Silt and angular gravel to boulders	Ephemeral	Good	Unlikely	
57	MC-Trib1F	30 to 45	5 to 25	Silt and angular gravel to boulders	Ephemeral	Good	Unlikely	
58	MCB	120 to 300	10 to 45	Fines with angular gravel to boulders	Perennial	Excellent	Observed	Considerable woody debris; brook trout were observed
59	MCBW-Trib1	50 to 150	5 to 20	Silt with angular gravel to boulders	Ephemeral	Good	Unlikely	Considerable number of downed trees and woody debris; flows through a mature cedar forest
60	MCBW-Trib1A	50 to 150	5	Silt with angular gravel to boulders	Ephemeral	Good	Unlikely	Sourced from an upslope forested wetland
61	MCBW-Trib1B	50 to 150	5	Silt with angular gravel to boulders	Ephemeral	Good	Unlikely	Considerable woody debris; flows down steep bank
62	MCBW-Trib2	50 to 200	5	Silt with angular gravel to boulders	Ephemeral	Good	Unlikely	Dry at time of delineation
63	MCBW-Trib3	50 to 300	5 to 15	Silt with angular gravel to boulders	Ephemeral	Good	Unlikely	In some locations the watercourse appears to flow adjacent to an old roadbed
64	OD-Ditch	60 to 100	5	Silt and garbage	Ephemeral	Fair	Unlikely	Drainage ditch adjacent to roadway into former dumping area; drains to ditch along Burchill Road
65	WC-01-A				·		<u> </u>	Flows along the surface in some areas and subterranean in others; some water flow comes from
66	WC-01-B	30 to 45	5 to 10	Silt with some angular cobble and boulders	Ephemeral	Fair	Unlikely	drainage ditch along Burchill Road
67	WC-02-A	40.1050	10 1- 00	C'h and an milan arkklar a l	E.L.	O I	Halliak.	Follows a portion of an old woods road; sourced by a forested wetland; some portions of channel are
68	WC-02-B	40 to 250	10 to 20	Silt and angular cobbles and boulders	Ephemeral	Good	Unlikely	subterranean
69	WC-03	60 to 100	5 to 10	Silt and angular cobbles and boulders	Ephemeral	Excellent	Unlikely	
70	WC-04	20 to 60	5 to 15	Silt and angular cobbles and boulders	Ephemeral	Good	Unlikely	
71	WC-05	30 to 70	5 to 15	Silt	Ephemeral	Good	Unlikely	Appears to be sourced by the drainage ditch along the western side of Burchill Road; flows into the woods, flows through the woods, then back alongside the road
72	WC-06	20 to 40	5 to 15	Silt	Ephemeral	Good	Unlikely	Sourced from ditch along Burchill Road and drains to wetland
							•	



Map ID	Unique ID	Width (cm)	Depth (cm)	Substrate	Flow	Streamside Vegetation	Fish Presence (Observed / Possible / Unlikely)	Comments
73	WC-07	20 to 40	5 to 10	Silt	Ephemeral	Good	Unlikely	A tributary to Maguires Cove Brook
74	WC-08	20 to 50	10 to 15	Silt	Ephemeral	Excellent	Unlikely	
75	BB-Trib8	25 to 100	5 to 15	Cobble and gravel	Perennial	Excellent	Possible	
76	BB-Trib8A	10 to 50	5 to 10	Silt and angular cobbles and boulders	Perennial	Excellent	Unlikely	
77	MCB2	50 to 200	10 to 30	Silt	Perennial	Excellent	Likely	Drains directly to Bay of Fundy at Maguires Cove



NOTES:
*BB = Burchill's Brook; Trib = Tributary; FC = Frenchman's Creek; MB = Marsh Brook; MC = Mill Creek; MCB = Maguires Cove Brook; MCBW = Maguires Cove Brook Wetland; PH = Paddy's Hill; PLE = PipeLine East; PLW = PipeLine West; WC = Watercourse; OD = Old Dump

4.2.1 Burchill Road Culvert Locations

Noticeable culverts below Burchill Road were recorded during the 2019 field assessments. A summary of those culverts is provided in Table 4.

Table 4. Summary of culverts observed below Burchill Road in west Saint John, New Brunswick.

Culvert	Inside diameter (mm)	Material	Latitude	Longitude	Comments
1	450	Concrete	45°10'27.34"N	66°12'22.73"W	
2	450	Concrete	45°10'29.72"N	66°12'23.68"W	
3	450	Concrete	45°10'32.30"N	66°12'25.40"W	
4	1 800	Corrugated steel	45°10'36.44"N	66°12'30.51"W	Conveys mainstem of Burchill's Brook
5	310	Concrete	45°10'56.95"N	66°12'25.63"W	Considerably undersized
6	450	Concrete	45°11'11.62"N	66°12'27.62"W	Conveys tributary of Frenchman's Creek; likely undersized; full of woody debris

5.0 RARE PLANTS

5.1 FIELD ASSESSMENT

A vegetation survey was conducted across the Project site between 10 June 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020 to determine the presence and locations of any rare plant species and rare vegetation communities. All told, 297 plant species were identified on the property (Table 5). According to ACCDC databases, five of those species are considered rare:

- purple false foxglove (Agalinis purpurea);
- coastal sedge (Carex exilis);
- Wiegand's sedge (Carex wiegandii);
- Loesel's twayblade (Liparis loeselii); and
- cloudberry (Rubus chamaemorus).

Interpretation of the ACCDC S-rank system is provided in Table 6. Figure 16 shows the general location of the rare plants observed at the Project site and the population density. More detailed information is included in the sections that follow.

Table 5. Flora species observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project. Red shaded entries indicate rare or sensitive species.

Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Balsam fir	Abies balsamea	S5	2015 07 15	Secure
Striped maple	Acer pensylvanicum	S5	2015 07 15	Secure
Red maple	Acer rubrum	S5	2015 07 15	Secure
Mountain maple	Acer spicatum	S5	2015 07 15	Secure
Common yarrow	Achillea millefolium	SNA	1999 11 29	Exotic
Bishop's goutweed	Aegopodium podagraria	SNA	2015 07 15	Exotic
Purple false foxglove	Agalinis purpurea	S1	2015 07 15	May Be At Risk
Redtop	Agrostis gigantea	SNA	2015 07 15	Exotic
Rough bent grass	Agrostis scabra	S5	2015 07 15	Secure
Northern water plantain	Alisma triviale	S5	2015 07 15	Secure
Speckled alder	Alnus incana	S5	2015 07 15	Secure
Green alder	Alnus viridis	S5	2015 07 15	Secure
Woodland angelica	Angelica sylvestris	SNA	2015 07 15	Exotic
Field pussytoes	Antennaria neglecta	SNA	2002 11 12	Exotic
Wild sarsaparilla	Aralia nudicaulis	S5	2015 07 15	Secure
Common lady fern	Athyrium filix-femina	S5	2015 07 15	Secure
Three-toothed whipwort	Bazzania Tricrenata	SU	2015 03 25	
Yellow birch	Betula alleghaniensis	S5	2015 07 15	Secure
Heart-leaved birch	Betula cordifolia	S5	2015 07 15	Secure
Nodding beggarticks	Bidens cernua	S5	2015 07 15	Secure
Devil's beggarticks	Bidens frondosa	S5	2015 07 15	Secure
Bluejoint reed grass	Calamagrostis canadensis	S5	2015 07 15	Secure
Chee reed grass	Calamagrostis epigeios	SNA	2015 07 15	Exotic
Hedge false bindweed	Calystegia sepium	S5	2015 07 15	Secure

Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Pennsylvania bittercress	Cardamine pensylvanica	S5	2015 07 15	Secure
Black sedge	Carex arctata	S5	2015 07 15	Secure
Golden sedge	Carex aurea	S4	2015 07 15	Secure
Brownish sedge	Carex brunnescens	S5	2015 07 15	Secure
Silvery sedge	Carex canescens	S5	2015 07 15	Secure
Chestnut sedge	Carex castanea	S4	2015 07 15	Secure
Crawford's sedge	Carex crawfordii	S5	2015 07 15	Secure
Hidden-scaled sedge	Carex cryptolepis	S4	2015 07 15	Secure
White-edged sedge	Carex debilis	S5	2015 07 15	Secure
Two-seeded sedge	Carex disperma	S5	2015 07 15	Secure
Star sedge	Carex echinata	S5	2015 07 15	Secure
Coastal sedge	Carex exilis	S3	2015 07 15	Secure
Yellow sedge	Carex flava	S5	2015 07 15	Secure
Graceful sedge	Carex gracillima	S5	2015 07 15	Secure
Nodding sedge	Carex gynandra	S5	2015 07 15	Secure
Bladder sedge	Carex intumescens	S5	2015 07 15	Secure
Slender sedge	Carex lasiocarpa	S5	2015 07 15	Secure
Bristly-stalked sedge	Carex leptalea	S5	2015 07 15	Secure
Finely-nerved sedge	Carex leptonervia	S5	2015 07 15	Secure
Sallow sedge	Carex lurida	S5	2015 07 15	Secure
Boreal bog sedge	Carex magellanica	S5	2015 07 15	Secure
Smooth black sedge	Carex nigra	S4S5	2015 07 15	Secure
New England sedge	Carex novae-angliae	S5	2015 07 15	Secure
Pale sedge	Carex pallescens	S5	2015 07 15	Secure
Few-flowered sedge	Carex pauciflora	S4S5	2015 07 15	Secure
Cyperuslike sedge	Carex pseudocyperus	S5	2015 07 15	Secure
Rough sedge	Carex scabrata	S5	2015 07 15	Secure
Broom sedge	Carex scoparia	S5	2015 07 15	Secure
Awl-fruited sedge	Carex stipata	S5	2015 07 15	Secure
Tussock sedge	Carex stricta	S5	2015 07 15	Secure
Blunt broom sedge	Carex tribuloides	S4S5	2015 07 15	Secure
Three-seeded sedge	Carex trisperma	S5	2015 07 15	Secure
Northern beaked sedge	Carex utriculata	S5	2015 07 15	Secure
Greenish sedge	Carex viridula	S4	2015 07 15	Secure
Fox sedge	Carex vulpinoidea	S4S5	2015 07 15	Secure
Wiegand's sedge	Carex wiegandii	S3	2015 07 15	Secure
Black knapweed	Centaurea nigra	SNA	2015 07 15	Exotic
Leatherleaf	Chamaedaphne calyculata	S5	2015 07 15	Secure
Fireweed	Chamaenerion angustifolium	S5	2015 07 15	Secure
White turtlehead	Chelone glabra	S5	2015 07 15	Secure
American golden saxifrage	Chrysosplenium americanum	S5	2015 07 15	Secure
Small enchanter's nightshade	Circaea alpina	S5	2015 07 15	Secure
Reindeer lichen	Cladonia polyscarpoides	SNA	2015 03 29	Undetermined
Goldthread	Coptis trifolia	S5	2015 07 15	Secure
Alternate-leaved dogwood	Cornus alternifolia	S5	2015 07 15	Secure
Bunchberry	Cornus canadensis	S5	2015 07 15	Secure
Red osier dogwood	Cornus sericea	S5	2015 07 15	Secure



Proverty oat grass Danthonia spicata S5 2015 07 15 Secure	Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Dasiphora fruticosa	Pink lady's-slipper	Cypripedium acaule	S5	2015 07 15	Secure
Eastern hay-scented fern Dennstaedita punctilobula S5 2015 07 15 Secure Woolly panic grass Dichanthellum acuminatum SNA 2018 12 11 Secure Northern bush honeysuckle Dienlingeria umbellata S5 2015 07 15 Secure Round-leaved sundew Drosera rolundfolla S5 2015 07 15 Secure Mountain wood fern Dryopteris carthustana S5 2015 07 15 Secure Spinulose wood fern Dryopteris carthustana S5 2015 07 15 Secure Crested wood fern Dryopteris carthustana S5 2015 07 15 Secure Evergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Regen barryard grass Echinochiaa crus-galli SNA 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Harge barryard grass Echinochiaa crus-galli SNA 2015 07 15 Secure Bull spikerush Eleocharis acidaris S5 2015 07 15 Secure Bull	Poverty oat grass	Danthonia spicata	S5	2015 07 15	Secure
Woolly panic grass Dichanthelium acuminatum SNA 2018 12 11 Secure Northern bush honeysuckle Diervilla lonicera S5 2015 07 15 Secure Round-leaved sundew Drosera rotundilloila S5 2015 07 15 Secure Round-leaved sundew Drosera rotundilloila S5 2015 07 15 Secure Mountain wood fern Dryopteris carmyloptera S5 2015 07 15 Secure Spinulose wood fern Dryopteris cristata S5 2015 07 15 Secure Evergreen wood fern Dryopteris mermedia S5 2015 07 15 Secure Evergreen wood fern Dryopteris marginalis S5 2015 07 15 Secure Common viger's bugloss Echium vulgare SNA 2015 07 15 Secure Large barryard grass Echinor vulgare SNA 2015 07 15 Secure Common spikerush Eleocharis acicularis S5 2015 07 15 Secure Blunt spikerush Eleocharis palustris S5 2015 07 15 Secure Blust spikerush <t< td=""><td>Shrubby cinquefoil</td><td>Dasiphora fruticosa</td><td>S4</td><td>2015 07 15</td><td>Secure</td></t<>	Shrubby cinquefoil	Dasiphora fruticosa	S4	2015 07 15	Secure
Northern bush honeysuckle Diervilla Ionicera S5 2015 07 15 Secure Hairy flat-lop white aster Doellingeria umbellata S5 2015 07 15 Secure Mount-leaved sundew Drosera rotundifolia S5 2015 07 15 Secure Mountain wood fern Dryopteris carthusiana S5 2015 07 15 Secure Crested wood fern Dryopteris carthusiana S5 2015 07 15 Secure Kergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Common viper's bugloss Echinum vulgare SNA 2015 07 15 Exolic Common viper's bugloss Echinum vulgare SNA 2015 07 15 Secure Black crowberry Eleocharis acicularis S5 2015 07 15 Secure Black crowberry Empetum nigrum S5 2015 07 15 Secure Trailing arbutus <t< td=""><td>Eastern hay-scented fern</td><td>Dennstaedtia punctilobula</td><td>S5</td><td>2015 07 15</td><td>Secure</td></t<>	Eastern hay-scented fern	Dennstaedtia punctilobula	S5	2015 07 15	Secure
Hairy flat-top white aster	Woolly panic grass	Dichanthelium acuminatum	SNA	2018 12 11	Secure
Round-leaved sundew Drosera rotundifolia S5 2015 07 15 Secure Mountain wood fern Dyopleris carthusiana S5 2015 07 15 Secure Spinulose wood fern Dryopteris carthusiana S5 2015 07 15 Secure Crested wood fern Dryopteris cristata S5 2015 07 15 Secure Evergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris intermedia S5 2015 07 15 Secure Common vipers bugloss Echium vulgare SNA 2015 07 15 Secure Common spikerush Eleocharis acicularis S5 2015 07 15 Secure Blunt spikerush Eleocharis adultaris S5 2015 07 15 Secure Common spikerush Eleocharis adultaris S5 2015 07 15 Secure Blunt spikerush Eleocharis adultaris S5 2015 07 15 Secure Common spikerush Eleocharis adultaris S5 2015 07 15 Secure Trailling arbutus Epigeat populat	Northern bush honeysuckle	Diervilla lonicera	S5	2015 07 15	Secure
Mountain wood fern Dryopteris carmpyloptera S5 2015 07 15 Secure Spinulose wood fern Dryopteris carthuslana S5 2015 07 15 Secure Crested wood fern Dryopteris carthuslana S5 2015 07 15 Secure Evergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Large barnyard grass Echinochloa crus-galli SNA 2015 07 15 Exolic Common viper's bugloss Echium vulgare SNA 2015 07 15 Secure Blunt spikerush Eleocharis oblusa S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Black crowberry Empelrum injurum S5 2015 07 15 Secure Northern willowherb Epilobium palustre S5 2015 07 15 Secure Northern willowherb Epilobium palustre S5 2015 07 15 Secure Helleborine Epilobium palust	Hairy flat-top white aster	Doellingeria umbellata	S5	2015 07 15	Secure
Spinulose wood fern Dryopteris cartinusiana S5 2015 07 15 Secure Crested wood fern Dryopteris cartistata S5 2015 07 15 Secure Evergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Harginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Large barnyard grass Echinochloa crus-galli SNA 2015 07 15 Exotic Common viper's bugloss Echinochloa crus-galli SNA 2015 07 15 Exotic Needle spikerush Eleocharis acicularis S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Morthern willowherb Epilobium ciliatum S5 2015 07 15 Secure Morthern willowherb Epilobium ciliatum S5 2015 07 15 Secure Marsh willowherb <td< td=""><td>Round-leaved sundew</td><td>Drosera rotundifolia</td><td>S5</td><td>2015 07 15</td><td>Secure</td></td<>	Round-leaved sundew	Drosera rotundifolia	S5	2015 07 15	Secure
Crested wood fern Dryopteris cristata S5 2015 07 15 Secure Evergreen wood fern Dryopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure S6 2015 07 15 Secure S7 2015 07 15 Secure S7 2015 07 15 Secure S8 2015 07 15 S	Mountain wood fern	Dryopteris campyloptera	S5	2015 07 15	Secure
Evergreen wood fern Dyopteris intermedia S5 2015 07 15 Secure Marginal wood fern Dryopteris marginalis S5 2015 07 15 Secure Large barnyard grass Echinochioa crus-galli SNA 2015 07 15 Exotic Common viper's bugloss Echium vulgare SNA 2015 07 15 Exotic Secure Blunt spikerush Eleocharis actualaris S5 2015 07 15 Secure Blunt spikerush Eleocharis palustris S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Black crowberry Empetrum nigrum S5 2015 07 15 Secure Black crowberry Empetrum nigrum S5 2015 07 15 Secure Northern willowherb Epilobium clilatum S5 2015 07 15 Secure Northern willowherb Epilobium palustre Epilobium palustre S5 2015 07 15 Secure Marsh willowherb Epilobium palustre Epipactis helleborine Epipactis helleborine Epipactis helleborine SNA 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum variegatum S4 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum wiginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum wiginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum wiginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum S5 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galum marinifolu	Spinulose wood fern	Dryopteris carthusiana	S5	2015 07 15	Secure
Marginal wood fern Dryopteris marginalis SS 2015 07 15 Secure Large barnyard grass Echinorchioa crus-galli SNA 2015 07 15 Exotic Common viper's bugloss Echium vulgare SNA 2015 07 15 Secure Blunt spikerush Eleocharis acicularis SS 2015 07 15 Secure Blunt spikerush Eleocharis palustris SS 2015 07 15 Secure Black crowberry Empetrum nigrum SS 2015 07 15 Secure Black crowberry Empetrum nigrum SS 2015 07 15 Secure Northern willowherb Epilobium ciliatum SS 2015 07 15 Secure Northern willowherb Epilobium ciliatum SS 2015 07 15 Secure Bagg willowherb Epilobium ciliatum SS 2015 07 15 Secure Marsh willowherb Epilobium leptophyllum SS 2015 07 15 Secure Marsh willowherb Epilobium palustre SS 2015 07 15 Secure Marsh willowherb Epilobium palustre SS 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum SS 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum SS 2015 07 15 Secure Philadelphia fleabane Erigeron strigosus SS 2015 07 15 Secure Rough fleabane Erigeron strigosus SS 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Tusnyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Tusnyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Tusnyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Tusnyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Tusnyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Townyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Townyo cottongrass Eriophorum vaginatum SS 2015 07 15 Secure Grass-leaved goldenrod Eupatarium maculatum SS 2015 07 15 Secure Common dog mustard Erurasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euphrasia nemorosa SN	Crested wood fern	Dryopteris cristata	S5	2015 07 15	Secure
Large barnyard grass	Evergreen wood fern	Dryopteris intermedia	S5	2015 07 15	Secure
Common viper's bugloss Echium vulgare SNA 2015 07 15 Exotic Needle spikerush Eleocharis acicularis S5 2015 07 15 Secure Blunt spikerush Eleocharis ablusa S5 2015 07 15 Secure Common spikerush Eleocharis palustris S5 2015 07 15 Secure Black crowberry Empetrum nigrum S5 2015 07 15 Secure Trailing arbutus Epigaea repens S5 2015 07 15 Secure Northern willowherb Epilobium ciliatum S5 2015 07 15 Secure Bog willowherb Epilobium palustre S5 2015 07 15 Secure Marsh willowherb Epilobium palustre S5 2015 07 15 Secure Helleborine Epilobium palustre S5 2015 07 15 Secure Helleborine Epilobium palustre S5 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum variegatum S4 2015 07	Marginal wood fern	Dryopteris marginalis	S5	2015 07 15	Secure
	Large barnyard grass	Echinochloa crus-galli	SNA	2015 07 15	Exotic
Blunt spikerush	Common viper's bugloss	Echium vulgare	SNA	2015 07 15	Exotic
Common spikerush Eleocharis palustris S5 2015 07 15 Secure Black crowberry Empetrum nigrum S5 2015 07 15 Secure Trailing arbutus Epigaea repens S5 2015 07 15 Secure Northern willowherb Epilobium ciliatum S5 2015 07 15 Secure Bog willowherb Epilobium palustre S5 2015 07 15 Secure Marsh willowherb Epilobium palustre S5 2015 07 15 Secure Helleborine Epipacits helleborine SNA 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum variegatum S4 2015 07 15 Secure Wariageated horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum argustifolium	Needle spikerush	Eleocharis acicularis	S5	2015 07 15	Secure
Black crowberry	Blunt spikerush	Eleocharis obtusa	S5	2015 07 15	Secure
Trailing arbutus	Common spikerush	Eleocharis palustris	S5	2015 07 15	Secure
Northern willowherb Epilobium ciliatum S5 2015 07 15 Secure Bog willowherb Epilobium leptophyllum S5 2015 07 15 Secure Marsh willowherb Epilobium palustre S5 2015 07 15 Secure Marsh willowherb Epilobium palustre S5 2015 07 15 Secure Helleborine Epipactis helleborine SNA 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Wordland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Warlegated horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Eriophorum virginicum S5 2015 07 15 Secure Tussock cottongrass Erio	Black crowberry	Empetrum nigrum	S5	2015 07 15	Secure
Bog willowherb Epilobium leptophyllum S5 2015 07 15 Secure Marsh willowherb Epilobium palustre S5 2015 07 15 Secure Helleborine Epipactis helleborine SNA 2015 07 15 Secure Helleborine Epipactis helleborine SNA 2015 07 15 Secure Woodland horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Worligated horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Rough fleabane Eriophorum angustifolium S5 2015 07 15 Secure Turssock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tursock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Secure Common eyebright Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Smooth bedstraw Galium triffidum S5 2015 07 15 Secure Three-petaled bedstraw Galium trifforum S5 2015 07 15 Secure Three-petaled bedstraw Galium trifforum S5 2015 07 15 Secure Creeping snowberry Gaultheria hispidula S5 2015 07 15 Secure	Trailing arbutus	Epigaea repens	S5	2015 07 15	Secure
Marsh willowherb Epilobium palustre Epipactis helleborine Epipactis helleborine Epipactis helleborine SNA 2015 07 15 Exotic Field horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Woodland horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tawny cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tawny cottongrass Eriophorum virginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Exotic Spotted Joe-pye-weed Eupatorium maculatum S5 2015 07 15 Secure Common eyebright Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galium trilidum S5 2015 07 15 Secure Three-petaled bedstraw Galium trilidum S5 2015 07 15 Secure Three-petaled bedstraw Galium trilidum S5 2015 07 15 Secure Creeping snowberry Gauttheria hispidula	Northern willowherb	Epilobium ciliatum	S5	2015 07 15	Secure
Marsh willowherb Epilobium palustre Epipactis helleborine Epipactis helleborine Epipactis helleborine SNA 2015 07 15 Exotic Field horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Woodland horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tawny cottongrass Eriophorum virginicum S5 2015 07 15 Secure Towny cottongrass Eriophorum virginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Exotic Spotted Joe-pye-weed Eupatorium maculatum S5 2015 07 15 Secure Common eyebright Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Three-petaled bedstraw Gallum mollugo SNA 2015 07 15 Secure Three-petaled bedstraw Gallum mollugo SNA 2015 07 15 Secure Three-petaled bedstraw Gallum trilforum S5 2015 07 15 Secure Three-petaled bedstraw Gallum trilforum S5 2015 07 15 Secure	Bog willowherb	·	S5	2015 07 15	Secure
Helleborine Epipactis helleborine SNA 2015 07 15 Exotic Field horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Variegated horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tawny cottongrass Eriophorum virginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Secure Common eyebright Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Wild strawberry Fragaria virginiana S5 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Smooth bedstraw Galium mollugo SNA 2015 07 15 Secure Three-petaled bedstraw Galium triflorum S5 2015 07 15 Secure Three-placed bedstraw Gallum triflorum S5 2015 07 15 Secure Creeping snowberry Gaultheria hispidula S5 2015 07 15 Secure		Epilobium palustre	S5	2015 07 15	Secure
Field horsetail Equisetum arvense S5 2015 07 15 Secure Woodland horsetail Equisetum sylvaticum S5 2015 07 15 Secure Wariegated horsetail Equisetum variegatum S4 2015 07 15 Secure Philadelphia fleabane Erigeron philadelphicus S4 2015 07 15 Secure Rough fleabane Erigeron strigosus S5 2015 07 15 Secure Narrow-leaved cottongrass Eriophorum angustifolium S5 2015 07 15 Secure Tussock cottongrass Eriophorum vaginatum S5 2015 07 15 Secure Tawny cottongrass Eriophorum virginicum S5 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Secure Common dog mustard Erucastrum gallicum SNA 2015 07 15 Secure Common eyebright Euphrasia nemorosa SNA 2015 07 15 Secure Grass-leaved goldenrod Euthamia graminifolia S5 2015 07 15 Secure Grass-leaved goldenrod Euthamia virginiana S5 2015 07 15 Secure Glossy buckthorn Frangula alnus SNA 2015 07 15 Secure Common hemp-nettle Galeopsis tetrahit SNA 2015 07 15 Secure Smooth bedstraw Galium nollugo SNA 2015 07 15 Secure Three-petaled bedstraw Galium trifidum S5 2015 07 15 Secure Three-flowered bedstraw Galium trifidum S5 2015 07 15 Secure Creeping snowberry Gaultheria hispidula S5 2015 07 15 Secure	Helleborine		SNA	2015 07 15	Exotic
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	Eastern teaberry	Gaultheria procumbens	S5	2015 07 15	Secure



Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Black huckleberry	Gaylussacia baccata	S5	2015 07 15	Secure
Yellow avens	Geum aleppicum	S5	2015 07 15	Secure
Water avens	Geum rivale	S5	2015 07 15	Secure
Canada manna grass	Glyceria canadensis	S5	2015 07 15	Secure
Common tall manna grass	Glyceria grandis	S5	2015 07 15	Secure
Slender manna grass	Glyceria melicaria	S5	2015 07 15	Secure
Fowl manna grass	Glyceria striata	S5	2015 07 15	Secure
Spurred gentian	Halenia deflexa	S4S5	2015 07 15	Secure
Orange hawkweed	Hieracium aurantiacum	SNA	2015 07 15	Exotic
Meadow hawkweed	Hieracium caespitosum	SNA	2015 07 15	Exotic
Rough hawkweed	Hieracium scabrum	S5	2015 07 15	Secure
Common hop	Humulus lupulus	SU	2015 07 15	Sensitive
American marsh pennywort	Hydrocotyle americana	S5	2015 07 15	Secure
Stairstep moss	Hylocomium splendens	S5	2015 03 31	Secure
Northern St. John's-wort	Hypericum boreale	S5	2002 11 12	Secure
Common St. John's-wort	Hypericum perforatum	SNA	2015 07 15	Exotic
Mountain holly	llex mucronata	S5	2015 07 15	Secure
Common winterberry	llex verticillata	S5	2015 07 15	Secure
Harlequin blue flag	Iris versicolor	S5	2015 07 15	Secure
Narrow-panicled rush	Juncus brevicaudatus	S5	2015 07 15	Secure
Soft rush	Juncus effusus	S5	2015 07 15	Secure
Thread rush	Juncus filiformis	S5	2015 07 15	Secure
Slender rush	Juncus tenuis	S5	2015 07 15	Secure
Common juniper	Juniperus communis	S5	2015 07 15	Secure
Sheep laurel	Kalmia angustifolia	S5	2015 07 15	Secure
Pale bog laurel	Kalmia polifolia	S5	2015 07 15	Secure
Tamarack	Larix laricina	S5	2015 07 15	Secure
Common Labrador tea	Ledum groenlandicum	S5	2015 07 15	Secure
Oxeye daisy	Leucanthemum vulgare	SNA	2015 07 15	Exotic
Butter-and-eggs	Linaria vulgaris	SNA	2015 07 15	Exotic
Twinflower	Linnaea borealis	S5	2015 07 15	Secure
Loesel's twayblade	Liparis loeselii	S3	2015 07 15	Secure
Inflated lobelia	Lobelia inflata	S5	2015 07 15	Secure
Canada fly honeysuckle	Lonicera canadensis	S5	2015 07 15	Secure
Mountain fly honeysuckle	Lonicera villosa	S5	2015 07 15	Secure
Garden bird's-foot trefoil	Lotus corniculatus	SNA	2015 07 15	Exotic
Large-leaved lupine	Lupinus polyphyllus	SNA	2015 07 15	Exotic
Hairy woodrush	Luzula acuminata	S5	2015 07 15	Secure
Stiff clubmoss	Lycopodium annotinum	S5	2015 07 15	Secure
Creeping jenny	Lycopodium complanatum	S4S5	2015 07 15	Secure
Round-branched tree-clubmoss	Lycopodium dendroideum	S5	2015 07 15	Secure
Northern water horehound	Lycopus uniflorus	S5	2015 07 15	Secure
Northern starflower	Lysimachia borealis	S5	2015 07 15	Secure
Swamp yellow loosestrife	Lysimachia terrestris	S5	2015 07 15	Secure
Purple loosestrife	Lythrum salicaria	SNA	2015 07 15	Exotic
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Wild lily-of-the-valley	Maianthemum canadense	S5	2015 07 15	Secure



Common Name	Scientific Name	SRank	SRankDate	Sgsrank
White sweet-clover	Melilotus albus	SNA	2015 07 15	Exotic
Wild mint	Mentha arvensis	S5	2015 07 15	Secure
Partridgeberry	Mitchella repens	S5	2015 07 15	Secure
Naked Bishop's-cap	Mitella nuda	S5	2015 07 15	Secure
Pinesap	Monotropa hypopithys	S4	2015 07 15	Secure
Convulsion-root	Monotropa uniflora	S5	2015 07 15	Secure
Sweet gale	Myrica gale	S5	2015 07 15	Secure
Alternate-flowered water milfoil	Myriophyllum alterniflorum	S4S5	2015 07 15	Secure
Mountain holly	Nemopanthus mucronatus	S5	2015 07 15	Secure
Whorled wood aster	Oclemena acuminata	S5	2015 07 15	Secure
Bog aster	Oclemena nemoralis	S5	2015 07 15	Secure
White panicled American-aster (hybrid)	Oclemena x blakei	SNA	2006 06 13	Not Assessed
Red bartsia	Odontites vernus	SNA	2015 07 15	Exotic
Common evening primrose	Oenothera biennis	S5	2015 07 15	Secure
Sensitive fern	Onoclea sensibilis	S5	2015 07 15	Secure
One-sided wintergreen	Orthilia secunda	S5	2015 07 15	Secure
White-grained mountain rice	Oryzopsis asperifolia	S5	2015 07 15	Secure
Interrupted fern	Osmunda claytoniana	S5	2015 07 15	Secure
Royal fern	Osmunda regalis	S5	2015 07 15	Secure
Cinnamon fern	Osmundastrum cinnamomeum	S5	2015 07 15	Secure
Common wood sorrel	Oxalis montana	S5	2015 07 15	Secure
European wood sorrel	Oxalis stricta	S5	2015 07 15	Secure
Golden groundsel	Packera aurea	S4S5	2015 07 15	Secure
Virginia creeper	Parthenocissus quinquefolia	SNA	2015 07 15	Exotic
Reed canary grass	Phalaris arundinacea	S5	2015 07 15	Secure
Northern beech fern	Phegopteris connectilis	S5	2015 07 15	Secure
Common Timothy	Phleum pratense	SNA	2015 07 15	Exotic
Black chokeberry	Photinia melanocarpa	S5	2015 07 15	Secure
Eastern ninebark	Physocarpus opulifolius	SNA	2015 07 15	Exotic
Black spruce	Picea mariana	S5	2015 07 15	Secure
Red spruce	Picea rubens	S5	2015 07 15	Secure
Club spur orchid	Platanthera clavellate	S4S5	2015 07 15	Secure
White bog orchid	Platanthera dilatata	S4	2015 07 15	Secure
Small round-leaved orchid	Platanthera orbiculate	S4	2015 07 15	Secure
Red-stemmed feather moss	Pleurozium schreberi	S5	2015 03 31	Secure
Canada blue grass	Poa compressa	SNA	2015 07 15	Exotic
Wood blue grass	Poa nemoralis	SNA	2015 07 15	Exotic
Fowl blue grass	Poa palustris	S5	2015 07 15	Secure
Fringed black bindweed	Polygonum cilinode	S5	2015 07 15	Secure
Marshpepper smartweed	Polygonum hydropiper	SNA	2015 07 15	Exotic
Spotted lady's thumb	Polygonum persicaria	SNA	2015 07 15	Exotic
Rock polypody	Polypodium virginianum	S5	2015 07 15	Secure
Balsam poplar	Populus balsamifera	S5	2015 07 15	Secure
Trembling aspen	Populus tremuloides	S5	2015 07 15	Secure
Ribbon-leaved pondweed	Potamogeton epihydrus	S5	2015 07 15	Secure
Common silverweed	Potentilla anserina	S5	2015 07 15	Secure
Rough cinquefoil	Potentilla norvegica	S5	2015 07 15	Secure
Nough chiqueton	r oteritiia rioi vegica	55	2013 07 13	Secure



Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Old field cinquefoil	Potentilla simplex	S5	2015 07 15	Secure
Gall of the Earth	Prenanthes trifoliolata	S5	2015 07 15	Secure
Common self-heal	Prunella vulgaris	S5	2015 07 15	Secure
Pin cherry	Prunus pensylvanica	S5	2015 07 15	Secure
Bracken fern	Pteridium aquilinum	S5	2015 07 15	Secure
Knight's plume moss	Ptilium crista-castrensis	S5	2015 03 31	Secure
Common buttercup	Ranunculus acris	SNA	2015 07 15	Exotic
Bristly buttercup	Ranunculus hispidus	S4S5	2015 07 15	Secure
Creeping buttercup	Ranunculus repens	SNA	2015 07 15	Exotic
Alder-leaved buckthorn	Rhamnus alnifolia	S4S5	2015 07 15	Secure
European buckthorn	Rhamnus cathartica	SNA	2015 07 15	Exotic
Little yellow rattle	Rhinanthus minor	SNA	2015 07 15	Secure
Rhodora	Rhododendron canadense	S5	2015 07 15	Secure
Skunk currant	Ribes glandulosum	S5	2015 07 15	Secure
Smooth gooseberry	Ribes hirtellum	S5	2015 07 15	Secure
Bristly black currant	Ribes lacustre	S5	2015 07 15	Secure
Swamp red currant	Ribes triste	S5	2015 07 15	Secure
Smooth rose	Rosa blanda	S5	2015 07 15	Secure
Shining rose	Rosa nitida	S5	2015 07 15	Secure
Rugosa rose	Rosa rugosa	SNA	2015 07 15	Exotic
Alleghaney blackberry	Rubus allegheniensis	S5	2015 07 15	Secure
Smooth blackberry	Rubus canadensis	S5	2015 07 15	Secure
Cloudberry	Rubus chamaemorus	S3S4	2015 07 15	Secure
Bristly dewberry	Rubus hispidus	S5	2015 07 15	Secure
Red raspberry	Rubus idaeus	S5	2015 07 15	Secure
Dwarf red raspberry	Rubus pubescens	S5	2015 07 15	Secure
Curled dock	Rumex crispus	SNA	2015 07 15	Exotic
Greater water dock	Rumex orbiculatus	S5	2015 07 15	Secure
Bebb's willow	Salix bebbiana	S5	2015 07 15	Secure
Pussy willow	Salix discolor	S5	2015 07 15	Secure
Shining willow	Salix lucida	S5	2015 07 15	Secure
Balsam willow	Salix pyrifolia	S5	2015 07 15	Secure
Red elderberry	Sambucus racemosa	S5	2015 07 15	Secure
Northern pitcher plant	Sarracenia purpurea	S5	2015 07 15	Secure
Black-girdled bulrush	Scirpus atrocinctus	S5	2015 07 15	Secure
Common woolly bulrush	Scirpus cyperinus	S5	2015 07 15	Secure
Mosquito bulrush	Scirpus hattorianus	S5	2015 07 15	Secure
Small-fruited bulrush	Scirpus microcarpus	S5	2015 07 15	Secure
Autumn hawkbit	Scorzoneroides autumnalis	SNA	2015 07 15	Exotic
White stonecrop	Sedum album	SNA	2015 07 15	Exotic
Sticky ragwort	Senecio viscosus	SNA	2015 07 15	Exotic
Bladder campion	Silene vulgaris	SNA	2015 07 15	Exotic
Mountain blue-eyed-grass	Sisyrinchium montanum	S5	2015 07 15	Secure
Bittersweet nightshade	Solanum dulcamara	SNA	2015 07 15	Exotic
Canada goldenrod	Solidago canadensis	S5	2015 07 15	Secure
Giant goldenrod	Solidago gigantea	S5	2015 07 15	Secure



Common Name	Scientific Name	SRank	SRankDate	Sgsrank
Rough-stemmed goldenrod	Solidago rugosa	S5	2015 07 15	Secure
American mountain ash	Sorbus americana	S5	2015 07 15	Secure
American burreed	Sparganium americanum	S5	2015 07 15	Secure
Broad-fruited burreed	Sparganium eurycarpum	S4S5	2015 07 15	Secure
White meadowsweet	Spiraea alba	S5	2015 07 15	Secure
Steeplebush	Spiraea tomentosa	S5	2015 07 15	Secure
Clasping-leaved twisted-stalk	Streptopus amplexifolius	S5	2015 07 15	Secure
Lance-leaved aster	Symphyotrichum lanceolatum	S5	2015 07 15	Secure
Calico aster	Symphyotrichum lateriflorum	S5	2015 07 15	Secure
New York aster	Symphyotrichum novi-belgii	S5	2015 07 15	Secure
Purple-stemmed aster	Symphyotrichum puniceum	S5	2015 07 15	Secure
Common tansy	Tanacetum vulgare	SNA	2015 07 15	Exotic
Common dandelion	Taraxacum officinale	SNA	2015 07 15	Exotic
Tall meadow-rue	Thalictrum pubescens	S5	2015 07 15	Secure
New York fern	Thelypteris noveboracensis	S5	2015 07 15	Secure
Eastern marsh fern	Thelypteris palustris	S5	2015 07 15	Secure
Eastern white cedar	Thuja occidentalis	S5	2015 07 15	Secure
Fraser's marsh-St. John's-wort	Triadenum fraseri	S5	2015 07 15	Secure
Rabbit's-foot clover	Trifolium arvense	SNA	2015 07 15	Exotic
Red clover	Trifolium pratense	SNA	2015 07 15	Exotic
Painted trillium	Trillium undulatum	S5	2015 07 15	Secure
Coltsfoot	Tussilago farfara	SNA	2015 07 15	Exotic
Broad-leaved cattail	Typha latifolia	S5	2015 07 15	Secure
Late lowbush blueberry	Vaccinium angustifolium	S5	2015 07 15	Secure
Velvet-leaved blueberry	Vaccinium myrtilloides	S5	2015 07 15	Secure
Small cranberry	Vaccinium oxycoccos	S5	2015 07 15	Secure
Mountain cranberry	Vaccinium vitis-idaea	S4S5	2015 07 15	Secure
American speedwell	Veronica americana	S5	2015 07 15	Secure
Common speedwell	Veronica officinalis	S5	2015 07 15	Exotic
Marsh speedwell	Veronica scutellata	S5	2015 07 15	Secure
Thyme-leaved speedwell	Veronica serpyllifolia	SNA	2015 07 15	Secure
Hobblebush	Viburnum lantanoides	S5	2015 07 15	Secure
Northern wild raisin	Viburnum nudum	S5	2015 07 15	Secure
Tufted vetch	Vicia cracca	SNA	2015 07 15	Exotic
Marsh blue violet	Viola cucullata	S5	2015 07 15	Secure
Lance-leaved violet	Viola lanceolata	S4	2015 07 15	Secure
Small white violet	Viola macloskeyi	S5	2015 07 15	Secure
Kidney-leaved white violet	Viola renifolia	S4S5	2015 07 15	Secure

Table 6. The Atlantic Canada Conservation Data Centre's Sub-national (*i.e.*, provincial) rarity rank (S-rank) of species and S-rank definitions.

ACCDC S-rank	Definition
S1	Extremely rare: may be especially vulnerable to extirpation; typically five or fewer occurrences or very few remaining individuals.
S2	Rare: may be vulnerable to extirpation due to rarity or other factors; six to 20 occurrences or few remaining individuals.
S3	Uncommon: found only in a restricted range, even if abundant at some locations; 21 to 100 occurrences.
S4	Usually widespread, fairly common: apparently secure with many occurrences, but of longer-term concern (<i>e.g.</i> , watch list); 100 + occurrences.
S5	Abundant: widespread and secure under present conditions.
S#S#	Numeric range rank: a range between two consecutive ranks for a species / community; denotes uncertainty about the exact rarity (<i>e.g.</i> , S1S2).
SH	Historical : previously occurred in the province but may have been overlooked during the past 20 years to 70 years; presence is suspected and will likely be rediscovered.
SU	Unrankable: possibly in peril, but status is uncertain; need more information.
SX	Extinct / Extirpated: believed to be extirpated from its former range.
S?	Unranked: not yet ranked.
SA	Accidental: accidental or casual, infrequent, and far outside usual range; includes species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds, or even thousands of miles outside their usual range.
SE	Exotic: an exotic established in the province (<i>e.g.</i> , Purple Loosestrife or Coltsfoot); may be native in nearby regions.
SE#	Exotic numeric: an established exotic that has been assigned a rank.
SP	Potential: potentially occurs, but no occurrences have been reported.
SR	Reported: no persuasive documentation (e.g., misidentified specimen).
SRF	Reported falsely: erroneously reported and the error has persisted in the literature.
SZ	Zero: not of practical conservation concern because there are no definable occurrences, although the species is native and appears regularly; an SZ rank is generally used for occasional long distance migrants.

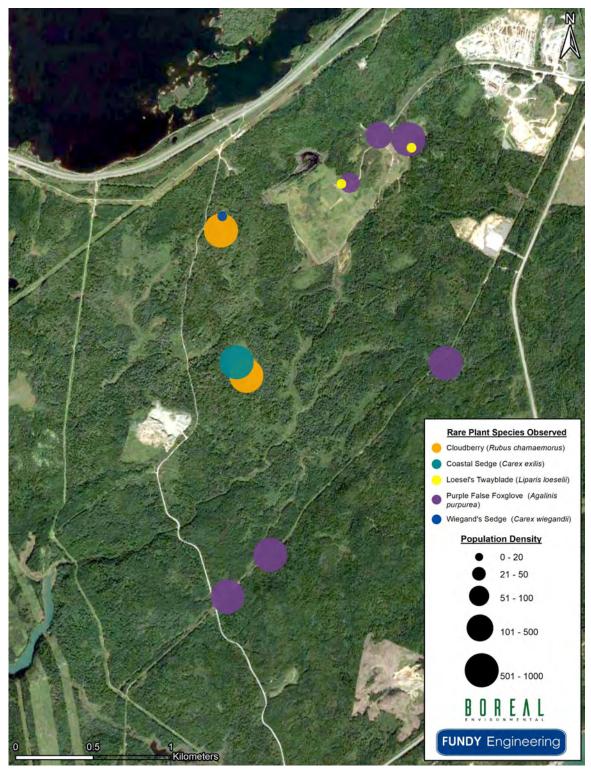


Figure 16. Location and population density of rare plants observed on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

5.1.1 Purple False Foxglove

Agalinis purpurea (Figure 17) is an annual forb native to eastern Canada. In late summer or early fall, the plant, which stands 10 cm to 120 cm tall, produces purple flowers that last about a month. It is hemiparasitic on a variety of hosts, particularly graminoids and appears to thrive in areas with occasional disturbance. According to the ACCDC databases, it is listed as S1 and May Be At Risk in New Brunswick (Table 5).

Purpurea was found at several locations on the property, but mainly in disturbed areas, such as along all-terrain vehicle trails, the pipeline right-of-way, and along the edges of roadways growing up through cracks in the asphalt (Figure 16). Specific locations in the field where observations were made along with approximate densities are provided in Table 7.





Figure 17. Photographs of *Agalinis purpurea* specimens identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Table 7. Locations of *Agalinis purpurea* identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Latitude	Longitude	Approximate Density
45°11'11.99"N	66°11'10.34"W	Several hundred
45°10'20.31"N	66°12'19.19"W	Several hundred
45°10'22.96"N	66°12'15.84"W	Several hundred
45°10'27.24"N	66°12'8.64"W	Several hundred
45°10'30.56"N	66°12'3.35"W	Several hundred
45°10'33.09"N	66°11'59.28"W	Several hundred
45°11'6.99"N	66°11'17.20"W	Several hundred
45°11'11.10"N	66°11'11.64"W	Several hundred



Latitude	Longitude	Approximate Density
45°11'58.88"N	66°11'33.76"W	Several hundred
45°11'57.93"N	66°11'30.91"W	Several hundred
45°11'11.17"N	66°11'11.02"W	A few hundred
45°11'48.04"N	66°11'39.65"W	A few hundred
45°11'58.94"N	66°11'28.48"W	5
45°11'56.05"N	66°11'24.49"W	50+
45°11'55.70"N	66°11'22.68"W	50+
45°11'56.38"N	66°11'22.42"W	50+
45°11'57.01"N	66°11'22.13"W	50+
45°11'58.11"N	66°11'21.09"W	50+
45°11'57.40"N	66°11'20.60"W	50+
45°11'55.90"N	66°11'20.90"W	50+

5.1.2 Coastal Sedge

Several hundred specimens of *Carex exilis* were observed (Figure 18) throughout the bog with central coordinates 45°11'10.01"N and 66°12'10.22"W (Figure 16). This species of sedge is found in open peatlands and patterned fens, which distinguishes it from all other *Carex* species. It blooms in late May through early June and fruiting occurs in early June through late July. The ACCDC lists the coastal sedge as being uncommon but secure in New Brunswick (Table 5).



Figure 18. Photograph of *Carex exilis* specimens identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

5.1.3 Wiegand's Sedge

Wiegand's sedge (*Carex wiegandii*) is a grass-like densely clumped sedge found in thin peatlands and bogs and acidic swamps in the shade of conifers or alder thickets. It generally has numerous flowering / fruiting stems 10 cm to 100 cm long with four to six flower / fruit clusters (Figure 19). The ACCDC lists Wiegand's sedge as being uncommon but secure in New Brunswick (Table 5). Three clumps of *wiegandii* were observed at 45°11'41.11"N and 66°12'17.20"W (Figure 16) within a swamp.





Figure 19. Photographs of *Carex wiegandii* specimens identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

5.1.4 Loesel's Twayblade

Loesel's twayblade (*Liparis loeselii*) was found in three locations on the property (Table 8; Figure 16). *Loeselii* (Figure 20) is a small (*i.e.*, 15 cm to 20 cm tall) bright yellowish green orchid often overlooked in fens, bogs, and disturbed habitats because of its size. It has two dark green, often glossy, basal leaves that appear in the spring and produces up to 18 small flowers in June and July. The ACCDC lists Loesel's twayblade as being uncommon but secure in New Brunswick (Table 5).

Table 8. Locations of *Liparis loeselii* identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Latitude	Longitude	Approximate Density
45°11'47.77"N	66°11'42.01"W	Nine plants over 1 m ²
45°11'55.27"N	66°11'21.28"W	Seven plants over 10 m ²
45°11'54.90"N	66°11'21.09"W	Three plants over 1 m ²





Figure 20. Photograph of *Liparis loeselii* specimens identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

5.1.5 Cloudberry

Cloudberry (*Rubus chamaemorus*) was found throughout the two bogs at the Project site (Figure 16). *Chamaemorus* (Figure 21) is a 10 cm to 25 cm tall rhizomatous herb that produces an amber-coloured edible fruit in the fall similar to raspberries or blackberries. It is typically found in cool boggy places and calcareous soils. The ACCDC lists the cloudberry as being uncommon but secure in New Brunswick (Table 5).



Figure 21. Photograph of *Rubus chamaemorus* identified on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

6.0 WETLAND DELINEATIONS

6.1 DESK-TOP ASSESSMENT

GeoNB mapping shows several large wetlands within the boundaries of the property (Figure 22). Several of the wetlands are contiguous with on-site watercourses, such as Burchill's Brook, Frenchman's Creek, Mill Creek, and Marsh Brook. The wetlands at the mouth of each of those aforementioned watercourses are considered provincially significant because they are tidal wetlands.

6.2 FIELD ASSESSMENTS

Wetlands were delineated in the field between 19 August 2019 and 15 October 2019 and between 31 July 2020 and 10 September 2020. Those wetlands are shown in Figure 23 and summarized in sections below.

6.2.1 Note on Hydric Soils

The soils within the study area are extremely shallow and sit atop bedrock. *Wicklund and Langmaid* [1953] described the soils in the area as Lorneville silty clay loam derived from marine deposits. The Lorneville series comprises red coloured fine-textured soils occurring along the coast. The soils are described as being poorly drained. Water is removed from the soil so slowly that the water table remains at or on the surface for the greater part of the time the soil is not frozen. These conditions are consistent across the site. Because of this, digging test pits and assessing the soils was considered extraordinary considering the landscape. Representatives with the NBDELG and NBDNRED were consulted and agreed that test pitting was not required for soils assessments.

6.2.2 Boundary Delineation

Wetland boundaries were delineated in the field by assessing the relationship between hydrological indicators, hydrophytic vegetation, and hydric soils. Each datum pint in the field was spaced about 5 m to 10 m apart.





Figure 22. Mapped wetlands present on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

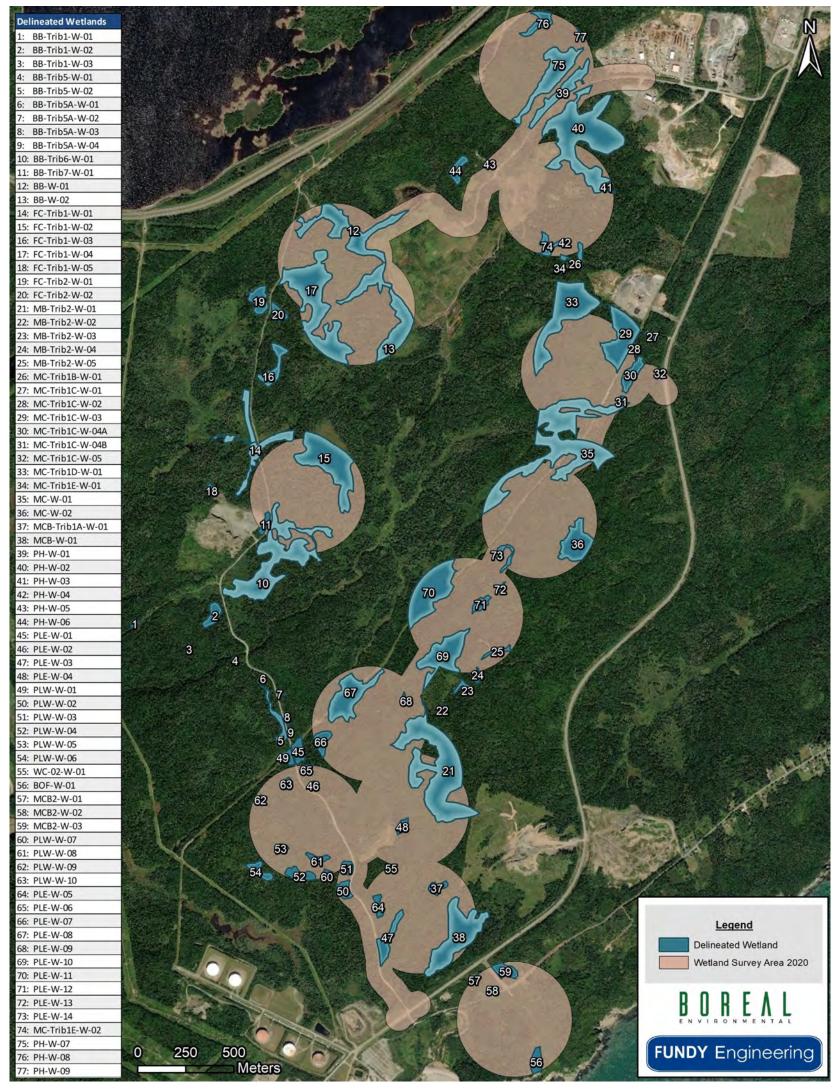


Figure 23. Wetlands delineated in the field within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

6.2.3 Small Wetlands

For this Project, wetlands < 0.5 ha in size are considered small wetlands. Detailed paired point analyses (*i.e.*, upland versus wetland) and WFAs were not completed for small wetlands. Instead, information gathered from the large nearby wetlands (*i.e.*, \geq 0.5 ha) were used for delineating the wetland boundaries.

A total of 39 small wetlands with a total area of 6.01 ha were delineated within the study area (Table 9). Overall, there is a fairly even mix of small tall shrub swamps and coniferous swamps located within the study area.

Table 9. Summary of small wetlands (*i.e.*, < 0.5 ha) delineated on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Map ID	Unique ID*	Classification	Size (ha)
1	BB-Trib1-W-01	Black spruce tall shrub swamp	0.12
3	BB-Trib1-W-03	Coniferous riparian linked swamp	0.03
4	BB-Trib5-W-01	Coniferous riparian linked swamp	0.04
6	BB-Trib5A-W-01	Coniferous riparian linked swamp	0.04
7	BB-Trib5A-W-02	Coniferous riparian linked swamp	0.04
8	BB-Trib5A-W-03	Coniferous basin swamp	0.03
9	BB-Trib5A-W-04	Coniferous basin swamp	0.03
18	FC-Trib1-W-05	Tall shrub swamp	0.21
22	MB-Trib2-W-02	Coniferous basin swamp	0.05
23	MB-Trib2-W-03	Coniferous basin swamp	0.38
24	MB-Trib2-W-04	Coniferous basin swamp	0.12
25	MB-Trib2-W-05	Coniferous basin swamp	0.22
27	MC-Trib1C-W-01	Tall shrub swamp	0.19
28	MC-Trib1C-W-02	Coniferous swamp	0.03
31	MC-Trib1C-W-04B	Tall shrub swamp	0.12
32	MC-Trib1C-W-05	Tall shrub swamp	0.04
34	MC-Trib1E-W-01	Riverine tall shrub swamp	0.02
37	MCB-Trib1A-W-01	Balsam fir riparian linked slope swamp	0.38
41	PH-W-03	Coniferous basin swamp	0.21
42	PH-W-04	Tall shrub swamp	0.07
43	PH-W-05	Tall shrub basin swamp	0.03
46	PLE-W-02	Tall shrub riparian linked swamp	0.05
48	PLE-W-04	Coniferous basin swamp	0.30
51	PLW-W-03	Coniferous basin swamp	0.39
53	PLW-W-05	Tall shrub swamp	0.21
55	WC-02-W-01	Mixed forest riparian linked slope swamp	0.04
57	MCB2-W-01	Tall shrub basin swamp	0.08
58	MCB2-W-02	Tall shrub basin swamp	0.13
60	PLW-W-07	Mature cedar basin swamp	0.14
61	PLW-W-08	Mature cedar slope swamp	0.36
62	PLW-W-09	Mature cedar basin swamp	0.11



Map ID	Unique ID*	Classification	Size (ha)
63	PLW-W-10	Mature cedar basin swamp	0.19
64	PLE-W-05	Mature cedar slope swamp	0.35
65	PLE-W-06	Mature cedar slope swamp	0.16
68	PLE-W-09	Coniferous basin swamp	0.08
71	PLE-W-12	Tall shrub basin swamp	0.44
72	PLE-W-13	Tall shrub basin swamp	0.09
73	PLE-W-14	Tall shrub drainageway swamp	0.41
77	PH-W-09	Coniferous basin swamp	0.08

NOTES:

*BB = Burchill's Brook; Trib = Tributary; W = Wetland; FC = Frenchman's Creek; MB = Marsh Brook; MC = Mill Creek; MCB = Maguires Cove Brook; PH = Paddy's Hill; PLE = PipeLine East; PLW = PipeLine West; WC = Watercourse

6.2.4 Large and / or Distinctive Wetlands

For this Project, wetlands ≥ 0.5 ha in size are considered large wetlands. Distinctive wetlands are those small wetlands (*i.e.*, < 0.5 ha) that displayed some noteworthy feature in the field (*e.g.*, the source of a perennial tributary, located in a highly disturbed area, *etc.*). Detailed paired point analyses (*i.e.*, upland versus wetland) and functional assessments were completed for all large and / or distinctive wetlands and the results are provided below (Table 10).

Overall, 38 large and / or distinctive wetlands with a combined area of 108.5 ha were delineated. Two of the wetlands are located outside of the current project area (i.e., PH-W-06 and PLW-W-06). Therefore, their WFAs are not included in Section 7.0.



Table 10. Summary of large (i.e., > 0.5 ha) and / or distinctive wetlands delineated within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

Man ID	Unique ID*	Classification	Sizo (he)		W	etland				Upland		
Map ID	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover
2	BB-Trib1-W-02	Eastern white cedar tall shrub swamp	0.68	Eastern white cedar, 50%Balsam fir, 20%Black spruce, 15%	 Speckled alder, 50% Eastern white cedar, 20% Balsam fir, 10% Black spruce, 20% 	Bunchberry, 15%Fowl manna grass, 10%	• Sphagnum sp., 90%	Immature mixed forest (40 years old)	 Balsam fir, 30% Eastern white cedar, 20% Red spruce, 20% Heart-leaved birch, 20% 	Balsam fir, 20%Heart-leaved birch, 15%Red spruce, 15%	• Bunchberry, 10%	• Sphagnum sp., 60%
5	BB-Trib5-W-02	Coniferous riparian linked swamp	0.71	 Eastern white cedar, 35% Balsam fir, 30% Black spruce, 15% Red maple, 10% 	 Speckled alder, 30% Balsam fir, 10% Eastern white cedar, 10% Red spruce, 10% 	 Fowl manna grass, 30% Bunchberry, 10% Spinulose woodfern, 10% 	• Sphagnum sp., 90%	Immature mixed forest (40 years old)	 Balsam fir, 35% Heart-leaved birch, 20% Eastern white cedar, 15% Red spruce, 15% Red maple, 10% 	Balsam fir, 20%Heart-leaved birch, 15%Red spruce, 15%	Bunchberry, 10%Evergreen woodfern, 10%Twinflower, 5%	• Sphagnum sp., 60%
10	BB-Trib6-W-01	Mature eastern white cedar (150 years old) swamp	7.54	Eastern white cedar, 85%Balsam fir, 5%	• Balsam fir, 2%		 Rhytidiadelphus sp., 80% Hylocomiastrum sp., 10% 	Immature softwood (40 years old)	 Balsam fir, 65% Heart-leaved birch, 10% Eastern white cedar, 5% Red spruce, 5% 	• Balsam fir, 10%		 Three-toothed whipwort, 15%
11	BB-Trib7-W-01	Coniferous basin swamp	0.29†	 Eastern white cedar, 30% Tamarack, 20% Balsam fir, 20% Black spruce, 15% 	Speckled alder, 35%Balsam fir, 10%Red maple, 3%	 Broad-leaved cattail, 15% Three-seeded sedge, 15% Spinulose woodfern,15% Allegheny blackberry, 2% 	• Sphagnum sp., 90%	Mature softwood	Balsam fir, 50%Heart-leaved birch, 20%Red maple, 10%	• Balsam fir, 10%	Evergreen woodfern, 15%Bunchberry 10%	Red-stemmed feather moss, 50%
12	BB-W-01	Mature coniferous slope swamp	4.25 [§]	 Eastern white cedar, 45% Balsam fir, 20% Heart-leaved birch, 10% Red maple, 5% Tamarack, 5% 	Balsam fir, 15%Mountain holly, 15%	 Cinnamon fern, 10% Bunchberry, 5% Three-seeded sedge, 3% Wood sorrel, 2% 	• Sphagnum sp., 90%	Mature softwood	Balsam fir, 40%Red spruce, 35%Heart-leaved birch, 5%	 Red spruce, 15% Balsam fir, 10% Sheep laurel, 5% Late lowbush blueberry, 1% 	• Starflower, 15%	Red-stemmed feather moss, 60%Stairstep moss, 10%
13	BB-W-02	Mixed forested swamp basin	4.41 [§]	 Tamarack, 20% Red maple, 20% Heart-leaved birch, 15% Balsam fir, 5% Black spruce, 5% Red spruce, 5% 	 American mountain ash, 5% Black spruce, 5% Balsam fir, 2% Sheep laurel, 10% Northern wild raisin, 2% Heart-leaved birch, 2% Mountain holly, 1% 	 Three-seeded sedge, 30% Cinnamon fern, 20% Bunchberry, 20% Slender manna grass, 2% 	• Sphagnum sp., 90%	Mature softwood	Balsam fir, 40%Red spruce, 35%Heart-leaved birch, 5%	 Red spruce, 15% Balsam fir, 10% Sheep laurel, 5% Late lowbush blueberry, 1% 		Red-stemmed feather moss, 60%Stairstep moss, 10%
14	FC-Trib1-W-01	Coniferous swamp	2.76	Balsam fir, 50%Tamarack, 30%Black spruce, 5%	Balsam fir, 20%Sheep laurel, 10%	Three-seeded sedge, 30%Bunchberry, 10%	Sphagnum sp., 90%Three-toothed whipwort, 5%	Mature softwood	Balsam fir, 40%Red spruce, 25%Heart-leaved birch, 10%	 American mountain ash, 5% Balsam fir, 5% Northern wild raisin, 2% 	Evergreen woodfern, 10%Bunchberry 2%	• <i>Dicranum sp.</i> , 10%



		01 15 11	O' (1)		We	tland				Upland		
Мар І	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover
15	FC-Trib1-W-02	Bog	5.35	 Black spruce, 50% Balsam fir, 10% Tamarack, 10% Heart-leaved birch, 2% 	 Black spruce, 10% Sheep laurel, 10% American mountain ash, 5% Mountain holly, 5% Balsam fir, 3% Common Labrador tea, 1% Velvet-leaved blueberry, 1% 	 Three-seeded sedge, 25% Three-leaved false Solomon's seal, 10% Bunchberry, 10% 	• Sphagnum sp., 100%	Mature softwood	 Red spruce, 20% Balsam fir, 20% Black spruce, 10% Tamarack, 10% Heart-leaved birch, 5% American mountain ash, 3% 	 Black spruce, 15% Sheep laurel, 15% Northern wild raisin, 2% American mountain ash, 1% 	Bunchberry, 20%	 Red-stemmed feather moss, 50% Dicranum sp., 10%
16	FC-Trib1-W-03	Coniferous basin swamp	1.16	 Eastern white cedar, 30% Tamarack, 20% Balsam fir, 20% Black spruce, 15% 	Speckled alder, 35%Balsam fir, 10%Red maple, 3%	 Broad-leaved cattail, 15% Three-seeded sedge, 15% Spinulose woodfern,15% Allegheny blackberry, 2% 	 Sphagnum sp., 75% Red-stemmed feather moss 	Mature softwood	 Balsam fir, 50% Heart-leaved birch, 20% Red maple, 10% 	• Balsam fir, 10%	Evergreen woodfern, 15%Bunchberry 10%	Red-stemmed feather moss, 50%
17	FC-Trib1-W-04	Eastern white cedar swamp	7.66	 Eastern white cedar, 40% Black spruce, 10% Balsam fir, 5% 	 Common Labrador tea, 15% Balsam fir, 10% Mountain holly, 10% Black spruce, 5% Common winterberry, 5% Eastern white cedar, 5% Sheep laurel, 5% 	 Three-seeded sedge, 20% Bog aster, 15% Bunchberry, 15% Cinnamon fern, 10% Fowl manna grass, 3% 	 Rhytidiadelphus sp., 80% Hylocomiastrum sp., 10% 	Mature softwood	 Heart-leaved birch, 10% Red maple, 10% Balsam fir, 5% 	 American mountain ash, 20% Mountain holly, 20% Northern wild raisin, 20% Sheep laurel, 10% Balsam fir, 5% Speckled alder, 5% Velvet-leaved blueberry, 5% 	 Bunchberry, 30% Twinflower, 5% Creeping snowberry, 2% Eastern teaberry, 1% 	
19	FC-Trib2-W-01	Tall shrub swamp	1.01	Balsam fir, 15%Red maple, 15%	 Speckled alder, 25% Mountain holly, 20% Red maple, 20% Balsam fir, 15% 	 Three-seeded sedge, 25% Hairy flat-top white aster, 20% Broad-leaved cattail, 15% Bladder sedge, 5% Bunchberry, 5% Crested wood fern, 5% Dwarf red raspberry, 5% 	• Sphagnum sp., 95%	Mature softwood	Balsam fir,Red spruceHeart-leaved birch	• Balsam fir		 Red-stemmed feather moss, 30% Three-toothed whipwort, 5%
20	FC-Trib2-W-02	Tall shrub swamp	0.50	Heart-leaved birch, 10%Balsam fir, 5%	 Bristly dewberry, 50% Mountain holly, 30% Northern wild raisin, 20% American mountain ash, 20% Speckled alder, 5% 	 Bunchberry, 25% Hairy flat-top white aster, 20% Bog aster, 5% Spinulose wood fern, 5% Three-seeded sedge, 5% 	• Sphagnum sp., 95%	Mature softwood	 Balsam fir, 35% Heart-leaved birch, 20% Red spruce, 10% 	 Balsam fir, 25% Sheep laurel, 15% Mountain holly, 10% American mountain ash, 5% Velvet-leaved blueberry, 5% 	Bunchberry, 40%	Red-stemmed feather moss, 25%



Man-ID	Unique ID*	Classification	Cine (be)		We	tland				Upland			
мар ір	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	
21	MB-Trib2-W-01	Coniferous slope swamp	10.05	 Balsam fir, 30% Red spruce, 25% Heart-leaved birch, 10% Eastern white cedar, 5% 	 Red spruce, 25% Balsam fir, 15% Heart-leaved birch, 5% 	 Bunchberry, 25% Three-seeded sedge, 15% Evergreen woodfern, 5% Spinulose woodfern, 5% 	• Sphagnum sp., 95%	Mature softwood	Black spruce, 35%Red spruce, 30%Balsam fir, 5%Heart-leaved birch, 2%	Sheep laurel, 20%Mountain holly, 5%Velvet-leaved blueberry, 5%	 Bunchberry, 15% Creeping snowberry, 10% Mountain cranberry, 5% 	 Red-stemmed feather moss, 70% Reindeer lichen, 10% Dicranum sp., 10% 	
26	MC-Trib1B-W-01	Riverine tall shrub swamp	0.48 [‡]	• Balsam fir, 5%	 Speckled alder, 50% Balsam fir, 5% Eastern white cedar, 2% 	 Flat-topped aster, 20% Slender manna grass, 20% Nodding sedge, 15% Rough-stemmed goldenrod, 10% Tall meadow-rue, 5% Swamp yellow loosestrife, 2% Northern water horehound, 2% Three-flowered bedstraw, 2% 		Mature softwood	 Red spruce, 60% Balsam fir, 10% Eastern white cedar, 5% Heart-leaved birch, 5% 	• Balsam fir, 40%		 Red-stemmed feather moss, 15% Dicranum sp., 10% Three-toothed whipwort, 10% 	
29	MC-Trib1C-W-03	Mature eastern white cedar (100 years+ old) riparian linked swamp	3.34	Eastern white cedar, 85%Red spruce, 5%		Spinulose wood fern, 1%Eastern white cedar, 1%	 Rhytidiadelphus sp., 50% Red-stemmed feather moss, 25% Stairstep moss, 20% 	Immature mixed forest (40 years old)	Balsam fir, 50%Heart-leaved birch, 25%Yellow birch, 5%	• Balsam fir, 10%			
30	MC-Trib1C-W-04A	Mature eastern white cedar (40 years+ old) riparian linked swamp	0.94	Eastern white cedar, 90%Red spruce, 5%		Spinulose wood fern, 10%Eastern white cedar, 5%	• Sphagnum sp., 100%	Immature mixed forest (40 years old)	Balsam fir, 50%Heart-leaved birch, 25%Yellow birch, 5%	• Balsam fir, 10%			
33	MC-Trib1D-W-01	Mature eastern white cedar (100 years+ old) swamp	5.53	 Eastern white cedar, 70% Black spruce, 10% 	 Eastern white cedar, 20% Sheep laurel, 5% 	 Three-seeded sedge, 15% Three-leaved false Solomon's seal, 10% Dwarf red raspberry, 5% Naked Bishop's-cap, 5% One-sided wintergreen, 5% Bristly-stalked sedge, 3% Bunchberry, 2% Fowl manna grass, 2% Twinflower, 2% 	 Red-stemmed feather moss, 80% Knight's plume moss, 5% Rhytidiadelphus sp., 5% Sphagnum sp., 5% 	Mature softwood (80 years+ old)	 Red spruce, 30% Balsam fir, 20% Heart-leaved birch, 10% 	Balsam fir, 25% Eastern white cedar, 5%	 Bunchberry, 30% Twinflower, 5% Goldthread, 1% 	 Red-stemmed feather moss, 50% Stairstep moss, 25% Three-toothed whipwort, 5% 	
35	MC-W-01	Mature eastern white cedar swamp	10.64	Eastern white cedar, 85%Red spruce, 5%		Twinflower, 5%Bunchberry, 3%Spinulose woodfern, 2%Dwarf red raspberry, 1%	 Red-stemmed feather moss, 80% Stairstep moss, 10% Three-toothed whipwort, 5% 	Immature mixed forest (40 years old)	Balsam fir, 40%Heart-leaved birch, 35%Red spruce, 5%	Balsam fir, 5%Heart-leaved birch, 5%		Three-toothed whipwort, 15%Red-stemmed feather moss, 5%	



Man ID	Unique ID*	Classification	Sizo (bo)		We	etland			Upland			
Map ID	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover
36	MC-W-02	Mature eastern white cedar basin swamp	2.39	Eastern white cedar, 60%Balsam fir, 10%	 Balsam fir, 10% Mountain holly, 10% Northern wild raisin, 5% Canada fly honeysuckle, 2% 	 Three-seeded sedge, 40% Bunchberry, 15% Woodland horsetail, 15% Hairy flat-top white aster, 10% Bladder sedge, 2% Twinflower, 2% Wild sarsaparilla, 2% 	 Sphagnum sp., 75% Red-stemmed feather moss 	Mature softwood	 Balsam fir, 50% Red spruce, 20% Heart-leaved birch, 10% Eastern white cedar, 5% 	 Balsam fir, 10% Northern wild raisin, 2% Canada fly honeysuckle, 1% 	 Bunchberry, 10% Evergreen wood fern, 10% Starflower, 2% Wild lily-of the valley, 1% 	•
38	MCB-W-01	Tall shrub riparian linked basin swamp	4.98	 Eastern white cedar, 40% Black spruce, 15% Tamarack, 15% Balsam fir, 10% 	Tamarack, 15%Speckled alder, 15%Balsam fir, 10%	Three-seeded sedge, 50%Fowl manna grass, 20%Bunchberry, 10%	• Sphagnum sp., 95%	Immature mixed forest (40 years old)	 Balsam fir, 40% Heart-leaved birch, 35% Red spruce, 10% Eastern white cedar, 5% 	Balsam fir, 5%Heart-leaved birch, 5%	Bunchberry, 25%Evergreen woodfern, 5%	 Red-stemmed feather moss, 50%
39	PH-W-01	Tall shrub basin swamp	1.82	Balsam fir, 25%Tamarack, 15%Black spruce, 10%Red maple, 5%	Speckled alder, 60%Tamarack, 15%Balsam fir, 10%Red spruce, 5%	 Three-seeded sedge, 30% Broad-leaved cattail, 15% Fowl manna grass, 10% Spinulose woodfern, 5% 	• Sphagnum sp., 100%	Mixed forest	Balsam fir, 70%Red spruce, 10%Heart-leaved birch, 10%	 Balsam fir, 20% Heart-leaved birch, 5% Mountain holly, 5% Red spruce, 5% 	• Bunchberry, 15%	• Sphagnum sp., 70%
40	PH-W-02	Eastern white cedar swamp	9.67	Eastern white cedar, 75%Black spruce, 10%	 Eastern white cedar, 5% American mountain ash, 2% 	 Three-seeded sedge, 30% Cinnamon fern, 20% Bunchberry, 5% New York fern, 5% Wild sarsaparilla, 5% Bladder sedge, 2% 	• Sphagnum sp., 100%	Mature softwood	• Balsam fir, 75%	• Balsam fir, 20%	• Bunchberry, 5%	 Red-stemmed feather moss, 30% Three-toothed whipwort, 30% Stairstep moss, 30%
44	PH-W-06	Coniferous basin swamp	0.72				OUTSIDE OI	F THE 2020 SURVEY AR	EA			
45	PLE-W-01	Coniferous tall shrub riparian linked swamp	0.61	 Balsam fir, 20% Black spruce, 20% Eastern white cedar, 5% Heart-leaved birch, 5% 	Speckled alder, 20%Balsam fir, 10%Eastern white cedar, 5%	 Broad-leaved cattail, 25% Three-seeded sedge, 15% Fowl manna grass, 10% 	• Sphagnum sp., 90%	Immature mixed forest (40 years old)	 Balsam fir, 35% Heart-leaved birch, 20% Eastern white cedar, 15% Red spruce, 15% Red maple, 10% 	Balsam fir, 20%Heart-leaved birch, 15%Red spruce, 15%	Bunchberry, 10%Evergreen woodfern, 10%Twinflower, 5%	• Sphagnum sp., 60%
47	PLE-W-03	Coniferous basin swamp	1.14	Balsam fir, 40%Eastern white cedar, 30%Black spruce, 15%	• Balsam fir, 10%	Bunchberry, 10%Spinulose woodfern, 10%Manna grass, 5%	• Sphagnum sp., 95%	Immature mixed forest (40 years old)	 Balsam fir, 40% Heart-leaved birch, 35% Red spruce, 10% Eastern white cedar, 5% 	Balsam fir, 5%Heart-leaved birch, 5%	Bunchberry, 25%Evergreen woodfern, 5%	 Red-stemmed feather moss, 50%
49	PLW-W-01	Spruce tall shrub riparian linked swamp	0.37¶	 Black spruce, 20% Balsam fir, 10% Eastern white cedar, 10% Heart-leaved birch, 5% Tamarack, 5% 	 Speckled alder, 30% Balsam fir, 10% Eastern white cedar, 10% 	 Broad-leaved cattail, 15% Three-seeded sedge, 20% Fowl manna grass, 10% 	• Sphagnum sp., 90%	Immature mixed forest (40 years old)	 Balsam fir, 35% Heart-leaved birch, 20% Eastern white cedar, 15% Red spruce, 15% Red maple, 10% 	 Balsam fir, 20% Heart-leaved birch, 15% Red spruce, 15% 	Bunchberry, 10%Evergreen woodfern, 10%Twinflower, 5%	• Sphagnum sp., 60%



Man ID	Unique ID*	Classification	Sizo (bo)		We	etland				Upland		
wap iD	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover
50	PLW-W-02	Eastern white cedar basin swamp	0.55	 Eastern white cedar, 30% Black spruce, 15% Balsam fir, 10% Heart-leaved birch, 10% 	Speckled alder, 50%Balsam fir, 10%Black spruce, 10%	Bunchberry, 10%Spinulose woodfern, 10%Manna grass, 5%	• Sphagnum sp., 95%	Mature softwood	Black spruce, 35%Red spruce, 30%Balsam fir, 10%Heart-leaved birch, 10%	 Sheep laurel, 20% Mountain holly, 10% Velvet-leaved blueberry, 10% 	Bunchberry, 15%Creeping snowberry, 10%Mountain cranberry, 5%	• Sphagnum sp., 75%
52	PLW-W-04	Mature eastern white cedar slope swamp	0.66	Eastern white cedar, 50%Balsam fir, 15%Red spruce, 5%	• Balsam fir, 5%	 Three-seeded sedge, 40% Bunchberry, 15% Wild sarsaparilla, 10% Common wood sorrel, 3% 	•	Mature mixed wood	 Heart-leaved birch, 25% Red spruce, 25% Balsam fir, 20% Eastern white cedar, 5% 	• Balsam fir, 5%	Bunchberry, 15%Wild sarsaparilla, 5%Starflower, 1%	•
54	PLW-W-06	Tall shrub swamp	0.61	•	Speckled alder, 50%Balsam fir, 10%Black spruce, 10%	Bunchberry, 10%Spinulose woodfern, 10%Manna grass, 5%	• Sphagnum sp., 95%	Mature softwood	Black spruce, 35%Red spruce, 30%Balsam fir, 10%Heart-leaved birch, 10%	 Sheep laurel, 20% Mountain holly, 10% Velvet-leaved blueberry, 10% 	Bunchberry, 15%Creeping snowberry, 10%Mountain cranberry, 5%	• Sphagnum sp., 75%
56	BOF-W-01	Tall shrub slope swamp	0.58	•	Speckled alder, 60%White meadowsweet, 10%	 Yellow sedge, 25% Thread rush, 20% Dwarf red raspberry, 10% Grass-leaved goldenrod, 10% Bluejoint reed grass, 5% Coltsfoot, 5% Purple-stemmed aster, 5% Soft rush, 5% Wild mint, 5% 	•	Tall shrub	•	 Speckled alder, 70% Alleghaney blackberry, 5% White meadowsweet, 5% 	 Mountain woodfern, 50% Rough-stemmed goldenrod, 2% 	•
59	MCB2-W-03	Tall shrub basin swamp	0.67	 Heart-leaved birch, 2% Tamarack, 2% 	 Mountain holly, 5% Speckled alder, 5% White meadowsweet, 5% 	 Whorled wood aster, 20% Bunchberry, 18% Dwarf red raspberry, 10% Hairy flat-top white aster, 5% Nodding sedge, 5% Soft rush, 5% Spotted lady's thumb, 5% Three-seeded sedge, 5% Tussock cottongrass, 3% 	• Sphagnum sp., 95%	Mature softwood	 Balsam fir, 40% Heart-leaved birch, 15% Eastern white cedar, 5% 	 Balsam fir, 5% American mountain ash, 5% 	• Evergreen wood fern, 2%	• Red-stemmed feather moss, 50%
66	PLE-W-07	Mature eastern white cedar slope swamp	0.69	Eastern white cedar, 50%Balsam fir, 20%Black spruce, 10%	• Balsam fir, 5%	 Twinflower, 10% Bunchberry, 5% Wild lily-of-the-valley, 3% Spinulose wood fern, 2% 	Sphagnum sp., 75%Red-stemmed feather moss	Mature mixed wood	 Balsam fir, 40% Heart-leaved birch, 20% Eastern white cedar, 10% Red spruce, 5% 	• Balsam fir, 5%	 Twinflower, 10% Bunchberry, 5% Wild lily-of-the-valley, 3% Spinulose wood fern, 2% 	•



Mari ID	Halana ID*	Olara idia akian	C: /b)		W	etland				Upland		
Map ID	Unique ID*	Classification	Size (ha)	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover	Classification	Dominant Trees	Dominant Shrubs	Dominant Herbs	Moss Cover
67	PLE-W-08	Mature eastern white cedar slope swamp	3.19	Eastern white cedar, 65%Balsam fir, 20%	 Balsam fir, 10% Speckled alder, 3% American mountain ash, 2% 	 Twinflower, 20% Dwarf red raspberry, 10% Common lady fern, 5% Northern beech fern, 5% Wild sarsaparilla, 3% Cinnamon fern, 2% 	 Bunchberry, 15% Common lady fern, 10% Dwarf red raspberry, 10% Wild sarsaparilla, 5% 	Mature soft wood	Balsam fir, 70%Heart-leaved birch, 10%	• Balsam fir, 10%	 Bunchberry, 15% Spinulose wood fern, 10% Common wood sorrel, 5% Wild lily-of-the-valley, 5% Creeping snowberry, 2% Starflower, 2% 	•
69	PLE-W-10	Mature coniferous basin swamp	3.30	Eastern white cedar, 25%Red spruce, 15%Balsam fir, 10%	Mountain holly, 20%Balsam fir, 15%Red spruce, 5%Speckled alder, 5%Sheep laurel, 1%	Cinnamon fern, 50%Tussock sedge, 20%Three-seeded sedge, 10%Bunchberry, 5%	Sphagnum sp., 75%Red-stemmed feather moss	Mature softwood	Balsam fir, 50%Red spruce, 20%Heart-leaved birch, 10%	Balsam fir, 10%Mountain holly, 2%	•	•
70	PLE-W-11	Mature coniferous slope swamp	4.50	 Eastern white cedar, 40% Balsam fir, 35% Heart-leaved birch, 5% 	 American mountain ash, 5% Balsam fir, 5% Canada fly honeysuckle, 3% 	•	 Sphagnum sp., 75% Red-stemmed feather moss 	Mature softwood	Balsam fir, 50%Red spruce, 25%Heart-leaved birch, 5%	• Balsam fir, 5%	 Bunchberry, 30% Spinulose wood fern, 10% American mountain ash, 3% Common wood sorrel, 2% 	•
74	MC-Trib1E-W-02		0.52				OUTSIDE O	F THE 2020 SURVEY AR	REA		20.101/ 2.10	
75	PH-W-07	Mature eastern white cedar basin swamp	3.34	 Eastern white cedar, 80% Balsam fir, 10% 	 Mountain holly, 20% Eastern white cedar, 10% Black spruce, 5% Sheep laurel, 3% Balsam fir, 2% 	 Three-seeded sedge, 10% Cloudberry, 10% Bristly-stalked sedge, 5% Cinnamon fern, 5% Wild lily-of-the-valley, 5% Bunchberry, 2% Starflower, 2% 	• Sphagnum sp., 100%	Mature softwood	 Red spruce, 40% Balsam fir, 10% Eastern white cedar, 10% Red maple, 5% 	 Mountain holly, 5% Sheep laurel, 2% American mountain ash, 1% 	Wild lily-of-the-valley, 2%Starflower, 1%	• Sphagnum sp., 70%
76	PH-W-08	Mature eastern white cedar basin swamp	0.89	 Eastern white cedar, 50% Balsam fir, 10% Red spruce, 10% Tamarack, 5% Yellow birch, 5% 	• Balsam fir, 5%	 Twinflower, 40% Three-seeded sedge, 10% Wild sarsaparilla, 5% Cinnamon fern, 3% Common lady fern, 2% Tall meadow-rue, 1% 	• Sphagnum sp., 100%	Mature mixed wood	 Eastern white cedar, 20% Red spruce, 20% Balsam fir, 10% Red maple, 5% 	 Balsam fir, 10% Heart-leaved birch, 20% 	 Starflower, 3% Wild lily-of-the-valley, 1% 	• Sphagnum sp., 70%



^{*}BB = Burchill's Brook; Trib = Tributary; W = Wetland; FC = Frenchman's Creek; MB = Marsh Brook; MC = Mill Creek; MCB = Maguires Cove Brook; PH = Paddy's Hill; PLE = PipeLine East; PLW = PipeLine West; WC = Watercourse

†Considered distinctive because it is the source of BB-Trib7 and is impacted by activities within the adjacent rock quarry

§During the 2019 delineation season, it was believed that BB-W-01 and BB-W-02 were separate wetlands, but additional delineation during the 2020 season revealed they are one large wetland; however, to avoid confusion with the earlier report, they were kept

separate within this report

[‡]Considered distinctive because it is the source of MC-Trib1B

Considered distinctive because it is located along the pipeline right-of-way and is impacted regularly by all-terrain vehicles

7.0 WETLAND FUNCTIONAL ASSESSMENTS

7.1 WESP-AC MODEL RESULTS

WFAs were completed for 36 wetlands within the survey area (*n.b.*, 38 wetlands are listed, but WFAs for two were not completed as they fall outside of the survey area). The full WESP-AC Model results for the wetlands assessed are included in Appendix II. A summary of the WFA scoring is provided in Table 11. The wetland functions are grouped as follows:

- hydrologic group:
 - water storage and delay;
- water quality support group:
 - sediment retention and stabilization;
 - phosphorous retention;
 - o nitrate removal and retention; and
 - carbon sequestration;
- aquatic support group:
 - streamflow support;
 - aquatic invertebrate habitat;
 - organic nutrient export; and
 - water cooling;
- aquatic habitat group:
 - anadromous fish habitat;
 - resident fish habitat;
 - amphibian and turtle habitat;
 - waterbird feeding habitat; and
 - waterbird nesting habitat;
- transition habitat:
 - o songbird, raptor, and mammal habitat;
 - native plant habitat; and
 - pollinator habitat;
- wetland condition (i.e., wetland ecological condition); and
- wetland risk (i.e., average of sensitivity and stressors).

The WFA results were plotted on a condition risk matrix shown in Figure 24. All of the wetlands assessed, save for two, scored a moderate to higher condition rating. Wetlands with a moderate risk rating were the lowest group. None of the wetlands assessed showed a higher condition rating combined with a higher risk rating. Seven of the assessed wetlands have a higher risk rating and include:

- BB-Trib5-W-02 (i.e., 5);
- BB-Trib7-W-01 (i.e., 11);
- BB-W-01 (i.e., 12);



- > PH-W-01 (*i.e.*, 39);
- > PLE-W-01 (*i.e.*, 45);
- > PLW-W-01 (*i.e.*, 49); and
- > PLW-W-02 (i.e., 50).

Results of the WFAs suggest that those wetlands in the survey area that have the highest condition rating have the lowest risk rating whereas those wetlands with the highest risk rating have a moderate condition rating.

Table 11. Summary of wetland functional assessments completed for large (i.e., ≥ 0.5 ha) and / or distinctive wetlands identified within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

		WES	SP-AC Summai	ry Ratings for (Grouped Funct	ions		
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Function Score (Normalized)	1.88	6.24	6.01	1.62	7.00	-	-
BB-Trib1-W-02	Function Rating	Lower	Higher	Moderate	Lower	Moderate	-	-
(2)	Benefits Score (Normalized)	0.37	4.91	2.45	1.30	4.05	7.83	0.98
	Benefits Rating	Lower	Moderate	Moderate	Lower	Moderate	HIGHER	LOWER
	Function Score (Normalized)	2.66	5.00	3.85	1.30	7.68	-	-
BB-Trib5-W-02	Function Rating	Moderate	Moderate	Moderate	Lower	Higher	-	-
(5)	Benefits Score (Normalized)	1.58	4.77	2.08	2.87	9.75	3.49	4.56
	Benefits Rating	Lower	Moderate	Moderate	Lower	Higher	MODERATE	HIGHER
	Function Score (Normalized)	6.25	2.57	6.75	3.84	9.40	-	-
BB-Trib6-W-01	Function Rating	Higher	Lower	Higher	Moderate	Higher	-	-
(10)	Benefits Score (Normalized)	1.68	3.78	3.57	3.04	4.77	7.59	2.26
	Benefits Rating	Lower	Lower	Moderate	Lower	Moderate	HIGHER	LOWER
	Function Score (Normalized)	4.06	3.76	5.08	3.97	8.51	-	-
BB-Trib7-W-01	Function Rating	Moderate	Moderate	Moderate	Moderate	Higher	-	-
(11)	Benefits Score (Normalized)	4.15	7.27	5.24	3.39	4.20	3.49	7.89
	Benefits Rating	Moderate	Moderate	Higher	Moderate	Higher	MODERATE	HIGHER
	Function Score (Normalized)	5.83	3.41	6.17	6.98	9.86	-	-
BB-W-01	Function Rating	Higher	Moderate	Higher	Higher	Higher	-	-
(12)	Benefits Score (Normalized)	0.42	7.02	5.47	7.33	10.00	6.39	6.10
	Benefits Rating	Lower	Moderate	Higher	Higher	Higher	MODERATE	HIGHER
DD III oo	Function Score (Normalized)	2.40	5.76	4.74	1.72	8.73	-	-
BB-W-02 (13)	Function Rating	Lower	Higher	Moderate	Lower	Higher	-	-
(13)	Benefits Score (Normalized)	0.52	10.00	2.66	0.73	3.83	7.11	0.44



		WES	SP-AC Summar	ry Ratings for C	Grouped Functi	ions		
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Benefits Rating	Lower	Higher	Moderate	Lower	Moderate	HIGHER	LOWER
	Function Score (Normalized)	6.15	3.30	8.66	6.49	9.42	-	-
FC-Trib1-W-01	Function Rating	Higher	Moderate	Higher	Higher	Higher	-	-
(14)	Benefits Score (Normalized)	0.29	8.79	6.95	4.80	4.02	6.39	5.49
	Benefits Rating	Lower	Higher	Higher	Moderate	Moderate	MODERATE	HIGHER
	Function Score (Normalized)	4.69	6.32	4.30	0.54	8.42	-	-
FC-Trib1-W-02	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(15)	Benefits Score (Normalized)	0.37	1.23	2.17	0.61	8.75	8.55	1.18
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	2.81	6.37	4.62	1.74	8.42	-	-
FC-Trib1-W-03	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(16)	Benefits Score (Normalized)	0.42	0.29	2.38	1.81	7.21	7.83	0.11
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	2.08	6.50	6.09	2.05	9.52	-	-
FC-Trib1-W-04	Function Rating	Lower	Higher	Higher	Lower	Higher	-	-
(17)	Benefits Score (Normalized)	0.42	1.10	2.67	1.04	8.75	8.55	1.23
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	2.92	3.23	7.39	5.61	9.69	-	-
FC-Trib2-W-01	Function Rating	Moderate	Moderate	Higher	Moderate	Higher	-	-
(19)	Benefits Score (Normalized)	0.39	3.48	4.31	3.85	4.57	7.59	1.61
	Benefits Rating	Lower	Lower	Moderate	Moderate	Moderate	HIGHER	LOWER
	Function Score (Normalized)	2.40	4.75	4.10	1.59	7.88	-	-
FC-Trib2-W-02	Function Rating	Lower	Moderate	Moderate	Lower	Higher	-	-
(20)	Benefits Score (Normalized)	0.42	3.46	2.34	0.65	3.44	4.22	1.77
	Benefits Rating	Lower	Lower	Moderate	Lower	Moderate	MODERATE	LOWER



		WES	SP-AC Summar	y Ratings for C	Grouped Funct	ions		
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Function Score (Normalized)	1.04	8.41	6.08	1.85	8.82	-	-
MB-Trib2-W-01	Function Rating	Lower	Higher	Higher	Higher	Lower	-	-
(21)	Benefits Score (Normalized)	1.30	0.73	0.66	0.65	3.94	8.55	1.08
	Benefits Rating	Lower	Lower	Lower	Lower	Moderate	HIGHER	LOWER
	Function Score (Normalized)	6.67	2.34	7.92	4.46	9.59	-	-
MC-Trib1B-W-01	Function Rating	Higher	Lower	Higher	Moderate	Higher	-	-
(26)	Benefits Score (Normalized)	1.43	8.62	6.35	3.35	4.51	7.11	2.11
	Benefits Rating	Lower	Higher	Higher	Moderate	Moderate	HIGHER	LOWER
	Function Score (Normalized)	1.20	7.95	4.17	1.68	8.05	-	-
MC-Trib1C-W-03	Function Rating	Lower	Higher	Moderate	Lower	Higher	-	-
(29)	Benefits Score (Normalized)	4.45	2.99	0.61	1.43	4.17	3.25	4.29
	Benefits Rating	Moderate	Lower	Lower	Lower	Moderate	MODERATE	MODERATE
	Function Score (Normalized)	2.66	6.27	4.13	1.69	7.66	-	-
MC-Trib1C-W-04A	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(30)	Benefits Score (Normalized)	1.33	0.29	4.44	0.52	3.57	5.66	1.27
	Benefits Rating	Lower	Lower	Moderate	Lower	Moderate	MODERATE	LOWER
	Function Score (Normalized)	5.63	6.21	4.72	1.88	8.33	-	-
MC-Trib1D-W-01	Function Rating	Higher	Higher	Moderate	Lower	Higher	-	-
(33)	Benefits Score (Normalized)	1.63	1.49	5.07	0.47	3.73	4.70	0.96
	Benefits Rating	Lower	Lower	Higher	Lower	Moderate	MODERATE	LOWER
	Function Score (Normalized)	4.48	3.74	4.21	6.21	9.20	-	-
MC-W-01	Function Rating	Moderate	Moderate	Moderate	Moderate	Higher	-	-
(35)	Benefits Score (Normalized)	0.22	10.00	5.52	5.53	9.17	4.94	2.28
	Benefits Rating	Lower	Higher	Higher	Moderate	Higher	MODERATE	LOWER
MC-W-02	Function Score (Normalized)	3.59	6.38	5.95	1.78	9.12	-	-



		WES	SP-AC Summai	ry Ratings for C	Grouped Funct	ions		Wetland Risk
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	
(36)	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
	Benefits Score (Normalized)	0.29	0.29	2.29	2.12	7.50	7.83	0.11
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	7.19	2.73	6.15	6.68	9.09	-	-
MCB-W-01	Function Rating	Higher	Lower	Higher	Higher	Higher	-	-
(38)	Benefits Score (Normalized)	1.91	8.90	8.15	5.01	4.61	5.66	1.56
	Benefits Rating	Lower	Higher	Higher	Moderate	Moderate	MODERATE	LOWER
	Function Score (Normalized)	2.55	2.72	3.41	5.42	9.26	-	-
PH-W-01	Function Rating	Moderate	Lower	Higher	Higher	Higher	-	-
(39)	Benefits Score (Normalized)	1.63	5.86	5.64	7.96	9.99	4.94	5.97
	Benefits Rating	Lower	Moderate	Higher	Higher	Higher	MODERATE	HIGHER
	Function Score (Normalized)	4.79	3.38	8.06	4.18	9.51	-	-
PH-W-02	Function Rating	Moderate	Moderate	Higher	Moderate	Higher	-	-
(40)	Benefits Score (Normalized)	1.68	2.89	6.57	3.17	4.70	6.39	2.26
	Benefits Rating	Lower	Lower	Higher	Moderate	Moderate	MODERATE	LOWER
	Function Score (Normalized)							
PH-W-06	Function Rating							
(44)	Benefits Score (Normalized)		OUTSIDE C	OF THE 2020 SUF	RVEY AREA			
	Benefits Rating							
	Function Score (Normalized)	0.00	10.00	1.55	4.03	8.74	-	-
PLE-W-01	Function Rating	Lower	Higher	Lower	Moderate	Higher	-	-
(45)	Benefits Score (Normalized)	0.37	3.95	2.77	4.46	4.76	3.98	5.22
	Benefits Rating	Lower	Lower	Moderate	Moderate	Moderate	MODERATE	HIGHER
PLE-W-03	Function Score (Normalized)	1.88	6.89	3.78	1.60	7.16	-	-
(47)	Function Rating	Lower	Higher	Lower	Lower	Moderate	-	-



		WES	SP-AC Summai	ry Ratings for (Grouped Funct	ions		
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Benefits Score (Normalized)	0.87	3.79	3.39	1.43	4.12	4.94	2.07
	Benefits Rating	Lower	Lower	Moderate	Lower	Moderate	MODERATE	LOWER
	Function Score (Normalized)	0.00	10.00	1.49	3.98	8.49	-	-
PLW-W-01	Function Rating	Lower	Higher	Lower	Moderate	Higher	-	-
(49)	Benefits Score (Normalized)	0.32	3.95	2.67	4.37	4.68	2.53	5.21
	Benefits Rating	Lower	Lower	Moderate	Moderate	Moderate	LOWER	HIGHER
	Function Score (Normalized)	2.66	5.68	4.89	1.93	8.28	-	-
PLW-W-02	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(50)	Benefits Score (Normalized)	0.37	3.85	2.42	0.89	3.94	4.94	4.91
	Benefits Rating	Lower	Lower	Moderate	Lower	Moderate	MODERATE	HIGHER
	Function Score (Normalized)	5.63	4.21	5.60	1.92	8.32	-	-
PLW-W-04	Function Rating	Higher	Moderate	Moderate	Lower	Higher	-	-
(52)	Benefits Score (Normalized)	0.50	1.10	2.54	1.90	7.24	4.22	1.21
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	MODERATE	LOWER
	Function Score (Normalized)	6.67	2.22	7.92	4.53	9.72	-	-
PLW-W-06	Function Rating	Higher	Lower	Higher	Moderate	Higher	-	-
(54)	Benefits Score (Normalized)	0.50	8.62	4.83	5.63	8.07	7.11	2.49
	Benefits Rating	Lower	Higher	Moderate	Moderate	Higher	HIGHER	LOWER
	Function Score (Normalized)	0.68	8.07	6.08	2.69	6.38	-	-
PLW-W-04	Function Rating	Lower	Higher	Higher	Moderate	Moderate	-	-
(56)	Benefits Score (Normalized)	1.81	5.27	0.62	1.16	4.83	3.98	4.07
	Benefits Rating	Lower	Moderate	Lower	Lower	Moderate	MODERATE	MODERATE
	Function Score (Normalized)	1.09	5.03	5.03	2.78	6.70	-	-
MCB2-W-03	Function Rating	Lower	Moderate	Moderate	Moderate	Moderate	-	-
(59)	Benefits Score (Normalized)	3.95	7.19	0.63	0.60	4.70	3.01	3.55



		WES	SP-AC Summai	ry Ratings for G	Grouped Funct	ions		
Unique ID (Map ID)	Description	Hydrologic	Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Benefits Rating	Moderate	Moderate	Lower	Lower	Moderate	LOWER	MODERATE
	Function Score (Normalized)	2.81	3.05	4.72	1.47	7.44	-	-
PLE-W-07	Function Rating	Moderate	Lower	Moderate	Lower	Moderate	-	-
(66)	Benefits Score (Normalized)	0.42	1.16	2.33	1.74	6.81	7.83	1.60
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	2.81	3.05	4.72	1.26	7.43	-	-
PLE-W-08	Function Rating	Moderate	Lower	Moderate	Lower	Moderate	-	-
(67)	Benefits Score (Normalized)	0.42	1.16	2.32	2.84	8.93	7.83	1.76
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	3.13	6.37	4.52	1.27	8.44	-	-
PLE-W-10	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(69)	Benefits Score (Normalized)	0.00	1.10	1.21	3.08	9.02	7.83	0.88
	Benefits Rating	Lower	Lower	Lower	Lower	Higher	HIGHER	LOWER
	Function Score (Normalized)	2.81	6.35	5.20	1.27	7.87	-	-
PLE-W-11	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(70)	Benefits Score (Normalized)	0.00	4.85	1.29	3.05	8.99	7.83	2.97
	Benefits Rating	Lower	Moderate	Lower	Lower	Higher	HIGHER	MODERATE
	Function Score (Normalized)							
MC-Trib1E-W-02	Function Rating		OUTSIDE C	OF THE 2020 SUR				
(74)	Benefits Score (Normalized)		OUTSIDE C	JF THE 2020 SUR	CVET AREA			
	Benefits Rating							
	Function Score (Normalized)	3.13	5.36	4.43	1.49	8.55	-	-
PH-W-07	Function Rating	Moderate	Moderate	Moderate	Lower	Higher	-	-
(75)	Benefits Score (Normalized)	1.68	1.02	5.22	1.84	7.24	7.83	0.58
	Benefits Rating	Lower	Lower	Higher	Lower	Lower	HIGHER	LOWER



		WES	P-AC Summa					
Unique ID (Map ID)	' Description		Water Quality Support	Aquatic Support	Aquatic Habitat	Transition Habitat	Wetland Condition	Wetland Risk
	Function Score (Normalized)	3.13	6.49	4.43	1.82	8.70	-	-
PH-W-08	Function Rating	Moderate	Higher	Moderate	Lower	Higher	-	-
(76)	Benefits Score (Normalized)	1.55	0.29	4.98	2.02	7.37	7.83	0.36
	Benefits Rating	Lower	Lower	Moderate	Lower	Higher	HIGHER	LOWER

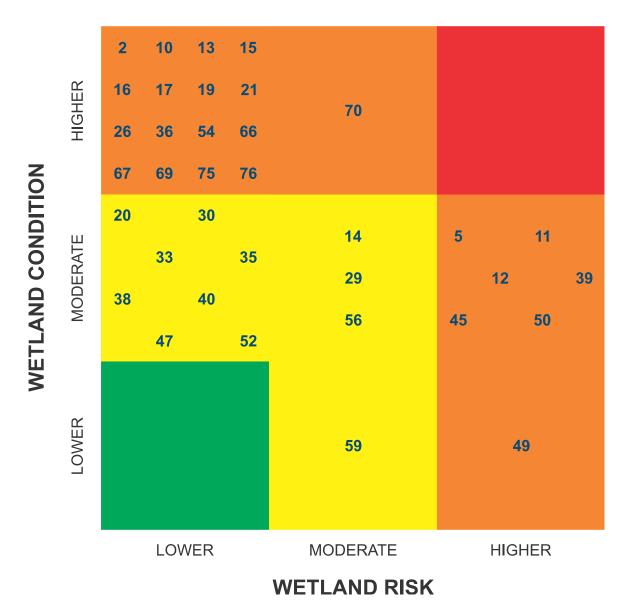


Figure 24. Condition risk assessment for large (i.e., \geq 0.5 ha) and / or distinctive wetlands identified within the survey area on the lands in west Saint John, New Brunswick being considered for the Burchill Wind Project.

8.0 SUMMARY

Watercourse and wetland assessments were completed on portions of PID 00412189 in west Saint John, New Brunswick in support of the Burchill Wind Project being proposed by Natural Forces.

The following is a summary of the findings:

- in addition to wetlands, five general types of habitat were observed across the property;
- all told, 297 plant species were identified on the property;
- five rare species were identified, one of which (i.e., purple false foxglove) May Be At Risk while the other four are considered secure;
- > overall, 77 watercourses were identified and delineated on the Project lands;
- most of the watercourses are ephemeral and likely do not support fish and / or fish habitat:
- ➤ a total of 39 small wetlands (i.e., < 0.5 ha in size) with a total area of 6.01 ha were delineated on the Project lands;
- verall, 38 large (i.e., ≥ 0.5 ha in size) and / or distinctive wetlands with a combined area of 108.5 ha were delineated on the Project lands; and
- wetland functional assessments were completed for 36 wetlands and results showed 17 ranked as having a higher wetland condition and seven ranked as having a higher wetland risk.

8.1 CLOSING

We trust that you will find the contents of this report satisfactory for your purposes. This report was prepared by Dr. Matthew Alexander, *P.Geo., EP* and reviewed by Ms. Crystal Caines, *P.Tech., PMP* and Mr. Derrick Mitchell, *B.Sc.F., R.P.F.* Please feel free to contact the undersigned at 506.674.9422 or via email at matt.alexander@fundyeng.com if any clarification is required.

Respectfully Submitted, FUNDY ENGINEERING & CONSULTING LTD.

Dr. Matthew D. Alexander, P.Geo., EP



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10.0 REPORT DISCLAIMERS AND DISCLOSURES

The sole purpose of this report and the associated services performed by Fundy Engineering & Consulting Ltd. was to complete watercourse and wetland assessments in support of an Environmental Impact Assessment for the proposed Burchill Wind Project in west Saint John, New Brunswick. The scope of services was defined at the Project outset between Fundy Engineering and Natural Forces personnel.

The observations made and the facts presented in this report are based on desktop assessments and field assessments conducted during spring, summer, and fall 2019 and summer 2020. Site conditions at the time of visitation / sampling only are reflected in this document. Certain data presented are based on statements, recollections, and observations of various individuals and where this is the case, sources are indicated. No independent confirmation of that information was made.

This report was prepared on behalf of and for the exclusive use of Natural Forces. The report expresses the professional opinion of Fundy Engineering experts and is based on their technical / scientific knowledge. Fundy Engineering & Consulting Ltd. accepts no liability or responsibility whatsoever for or in respect of any use of or reliance upon this report or data by any third-party. Fundy Engineering makes no guarantee that the Client will be successful in the regulatory approval process.



Appendix I:

Watercourse and Wetland Photographs



WATERCOURSES



Washed out crossing on BB along the water pipeline that extends from Spruce Lake to Coleson Cove.



BB

Washed out crossing on BB along the water pipeline that extends from Spruce Lake to Coleson Cove.



BB

Washed out crossing on BB along the water pipeline that extends from Spruce Lake to Coleson Cove.



BB

~ 1 800 mm corrugated steel culvert that conveys BB under Burchill Road.



BB
Upstream of confluence with BB-Trib4.



BB
Upstream of confluence with BB-Trib4.



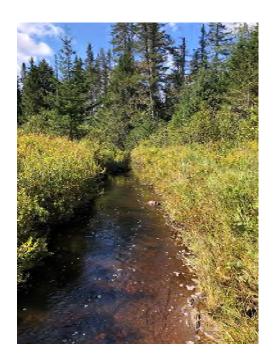
BB
Small waterfall on BB mid-way between BB-Trib3 and BB-Trib4.



BB
Small waterfall on BB near confluence with BB-Trib2.



Looking upstream on BB at confluence with BB-Trib7.



BB Looking downstream on BB at confluence with BB-Trib7.





Looking upstream on BB adjacent to the northwest corner of the Spruce Lake Landfill site.

Looking downstream on BB adjacent to the northwest corner of the Spruce Lake Landfill site.



BB-Trib1
BB-Trib1 as it flows across Cheeseman Beach
Road from BB-Trib1-W-01.



BB-Trib1
BB-Trib1 as it flows across Cheeseman Beach
Road from BB-Trib1-W-01.



600 mm ID concrete culvert that conveys BB-Trib1 to BB under the water pipeline that extends from Spruce Lake to Coleson Cove.

BB-Trib1



BB-Trib1



BB-Trib1



BB-Trib1C



BB-Trib1A



BB-Trib1D



BB-Trib1D



BB-Trib1F



BB-Trib1E



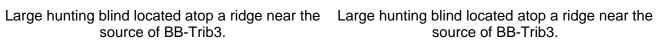
BB-Trib2



BB-Trib3



BB-Trib3





BB-Trib3



BB-Trib3



BB-Trib5



BB-Trib5C



BB-Trib5A-1



BB-Trib5D

450 mm ID concrete culvert that conveys BB-Trib5D under Burchill Road.







BB-Trib6A



BB-Trib6A



BB-Trib6B



310 mm ID concrete culvert that conveys BB-Trib7 from BB-Trib7-W-01 under Burchill Road.



BB-Trib7 BB-Trib7 upstream of confluence with BB-Trib7B



BB-Trib7



BB-Trib7



BB-Trib7
BB-Trib7 upstream of confluence with BB.



BB-Trib8



BB-Trib7A



BB-Trib8



FC-Trib1
450 mm ID concrete culvert that conveys FC-Trib1 under Burchill Road.



FC-Trib1



FC-Trib1



FC-Trib1C



FC-Trib1D



FC-Trib1E



MC-Trib1B



MC-Trib1C
Access road that allows vehicles to ford the tributary.



MC-Trib1C
Access road that allows vehicles to ford the tributary.



MC-Trib1C



MC-Trib1C



MC-Trib1C







MCB-Trib1B



MCB



MCBW-Trib1



MCBW-Trib1



MCBW-Trib1



MCBW-Trib1



MCBW-Trib1A



MCBW-Trib2



MCBW-Trib3



MCBW-Trib2



MCBW-Trib3





MCB2 MCB2





OD-Ditch WC-01A



WC-01A



WC-02B



WC-02A



WC-03







WC-05



WC-05



WC-05





WC-06 WC-07

WETLANDS





BB-Trib1-W-01

BB-Trib1-W-01 adjacent to Cheeseman Beach Road. Under high runoff conditions, water flows from the wetland by flowing across the road.

BB-Trib1-W-01





BB-Trib1-W-03

BB-Trib5-W-02



BB-Trib5-W-02



BB-Trib5-W-02



BB-Trib6-W-01 (Upland)



BB-Trib6-W-01 (Upland)



BB-Trib6-W-01 (Wetland)



BB-Trib6-W-01 (Wetland)



BB-Trib7-W-01



BB-Trib7-W-01





BB-W-01 BB-W-01





BB-W-01 BB-W-02





BB-W-02 BB-W-02





BB-W-02 (Upland)

BB-W-02 (Upland)





FC-Trib1-W-01

FC-Trib1-W-01





FC-Trib1-W-01

FC-Trib1-W-01













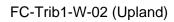
FC-Trib1-W-01 FC-Trib1-W-01



FC-Trib1-W-01 (Upland)

FC-Trib1-W-01 (Upland)







FC-Trib1-W-02 (Upland)



FC-Trib1-W-02 (Wetland)



FC-Trib1-W-02 (Wetland)



FC-Trib1-W-04 (Upland)



FC-Trib1-W-04 (Upland)



FC-Trib1-W-04 (Wetland)



FC-Trib1-W-04 (Wetland)



FC-Trib2-W-01 (Upland)



FC-Trib2-W-01 (Upland)



FC-Trib2-W-01 (Wetland)



FC-Trib2-W-01 (Wetland)



FC-Trib2-W-02 (Upland)



FC-Trib2-W-02 (Upland)



FC-Trib2-W-02 (Wetland)



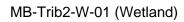
FC-Trib2-W-02 (Wetland)



MB-Trib2-W-01 (Upland)

MB-Trib2-W-01 (Upland)







MB-Trib2-W-01 (Wetland)



MC-Trib1B-W-01 (Upland)



MC-Trib1B-W-01 (Upland)





MC-Trib1B-W-01 (Wetland)

MC-Trib1B-W-01 (Wetland)





MC-Trib1C-W-01

MC-Trib1C-W-01



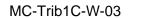
MC-Trib1C-W-03

Under high runoff conditions, water flows from the wetland across the pipeline right-of-way road to MC-Trib1C-2.



MC-Trib1C-W-03







MC-Trib1C-W-03



MC-Trib1C-W-03 (Upland)

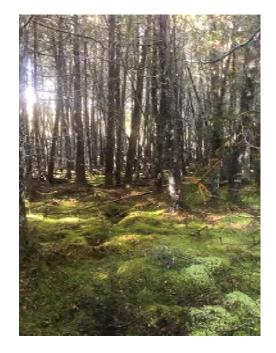
MC-Trib1C-W-03 (Upland)



MC-Trib1C-W-03 (Wetland)



MC-Trib1C-W-03 (Wetland)



MC-Trib1C-W-04A



MC-Trib1C-W-04A



MC-Trib1C-W-04B



MC-Trib1C-W-05



MC-Trib1D-W-01 (Upland)



MC-Trib1D-W-01 (Upland)



MC-Trib1D-W-01 (Wetland)



MC-Trib1D-W-01 (Wetland)



MC-W-01 (Upland)



MC-W-01 (Upland)





MC-W-01 (Wetland)

MC-W-01 (Wetland)





MCB-W-01

MCB-W-01





MCB-W-01 (Upland)

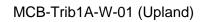
MCB-W-01 (Upland)

Looking from the edge of the property towards the knob of rock being quarried with large deer stand in the middle of the clearcut.





MCB-Trib1A-W-01 (Wetland)







PH-W-01 PH-W-01





PH-W-01 PH-W-01





PH-W-01 PH-W-02 (Wetland)





PH-W-02 (Wetland)

PH-W-05





PLE-W-01

PLE-W-02 (Upland)





PLE-W-02 PLE-W-03





PLE-W-03 PLW-W-01





PLW-W-01 PLW-W-02



WC-02-W-01



BB-W-02



PLE-W-10 (upland)



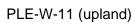
PLE-W-10 (wetland)



PLE-W-13 (upland)

PLE-W-13 (wetland)







PLE-W-11 (wetland)



MC-W-02 (upland)



MC-W-02 (wetland)





PH-W-07 (upland)

PH-W-07 (wetland)





PH-W-08 (upland)

PH-W-08 (wetland)





BB-W-01 (upland)

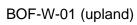
BB-W-01 (wetland)



PLW-W-04 (upland)

PLW-W-04 (wetland)







BOF-W-01 (wetland)

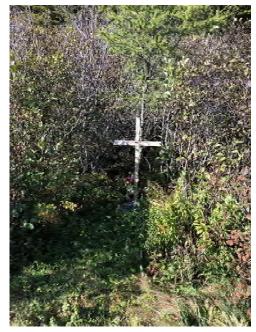


MCB2-W-03 (upland)



MCB2-W-03 (wetland)

GENERAL INTEREST PHOTOS



Roadside Cross

Mark Bernatchez died by tragic accident 25 June 2005 on King William Road near intersection with Burchill Road.



Deer baiting between MC-Trib1C-W-04A and MC-Trib1C-W-04B.



RC airplane field atop former Spruce Lake Landfill.



Looking from atop former Spruce Lake Landfill towards leachate treatment wetland.



Temporary wind data collection tower atop former Spruce Lake Landfill.



Bedrock outcrop along BB downstream of confluence with BB-Trib4.

Appendix II:

WESP-AC Model Results



Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - BB-Trib6-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	14 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.181083
Longitude (decimal degrees):	-66.206548
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	7.6
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the O (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: NSE water Storage, SSES Stream Flow Support, WC-Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBR= Netroined Habitat, PD= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised.
		New Brunswick	- 1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	Spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
OF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the are- from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares. 10 to 100 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		>100 hectares.	0	
OF3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		>100 hectares.	1	
OF4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus al adjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
OF5	Distance to Large Vegetated Tract	1000 hectares. (This is nearly always the answer in relatively undeveloped landscapes) The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:	U	To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
	g	<50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes	.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing areal imagery in Google Earth First successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv. PHv. PDLv., SBMv, WBFv, WBNv]
OF7	Woody Uniqueness	"herbaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in
		consider: The AAS vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	
		5 to 20% of the land.	0	
		20 to 60% of the land.	0	
		60 to 90% of the land.	0	
		>90% of the land. SKIP to OF10.	1	
OF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
OF10	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Nearest Population	<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	100 - 500 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
		0.5- 1 km.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		1 - 5 km.	1	
		>5 km.	0	
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See	OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
27 20 m 20		Maintaineu Roau	<10 m.	0	use the geolog's blaw bile tool. [Alw, FAV, FRV, NRV, PH, PU, SbW, STR, WbN]
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Service Services (1.5) year or received (1.5) year or received (1.5) year of year of the collection of	OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other		In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a
March Marc				0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road hidden under forest canopy. [AM, SBM, STR]
And a set of experted property from the security from the	OF13		The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		
Part April 1997 Control Section Part Control Part Part Control Part Control Part Control Part Control Part Part Control Part		Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	
STATE Control processed by the information of the control processed of			JEO m. but completely congreted by those features	0	
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Product Mode of Text 1997. The Buildings of Text 1997. The Color Products of the Color			None of the above (the closest patches or corridors that large are >1 km away).	0	
100 - 100 -	OF14				Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
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100 m. 1 m. 100 m. 1 m. 100 m. 1 m. 100 m. 1 m. 1	OF15	Tidal Proximity			In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicher
100 = 1 lan.				n	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
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New Service (and the continue of the continue		tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Dat
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0.1 to 1			**		1
1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised 0 bog). DF23 Unvegetated Surface in the Contributing Area The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots other pavement, exposed bedrock, landslides, and other mostly-bare surface is about: 10% 10 to 25%				1	
bog). DF23 Unvegetated Surface in the Contributing Area the Contributing Area 210%. 10 to 25%. Do 3. 10 to 25%. Do 3. Do 3. Do 4. Do 4. Do 4. Do 5. Do 5. Do 5. Do 5. Do 6. Do 6. Do 7. Do				0	1
the Contributing Area other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%. 1 10 to 25%. 0			bog).		
10 to 25%.	OF23		other pavement, exposed bedrock, landslides, and other mostly-bare surface is about :		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
			<10%.	1	
			10 to 350/	Δ.	

Form OF Non-tidal 2

OF24 Tra	ansport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	15	[NRv, PRv, SRv, WSv]
1 1		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
1 .				
1 .		Mostly true.	0	
1 .		Somewhat true.	1	
		Mostly untrue.	0	
OF25 Asp	pect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
0120 715				pan, m, or o, mo, moj
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	0	1
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	1	
OF26 Inte	ernal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inl
	ath Length)	The horizontal low distance from the wettand's interior outlet is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
(1 4	au Longin)	<10 m.	0	and which are duties) and adjinent by held inspection. [MK, OE, FK, SK, WS]
		10 - 50 m.	0	1
		50 - 100 m.	0	
			U	
		100 - 1000 m.		
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27 Gro	owing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
SIC.		and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS
OF30 F:				
OF28 Fish	sh Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have b
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	ľ	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocke
		Appendix A of the Mandal. Contact local fishery biologists, review the ACCBC report, and visit these websites. http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	1	aters.html
		4	_	[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		1
		Is probably is not accessed by any anadromous fish species but is known or likely to haveother fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29 Spe	ecies of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable.		Request information from ACCDC and/or conduct your own survey at an appropriate season using
	ncern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
COI				WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying SuppInfo file, or the AA is within a	0	
		mapped Atlantic Coastal Plain Flora Buffer	1	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	1
		accompanying Suppinfo file.	ľ	
1 1		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
1 .			U	
1 .		accompanying Supplinfo file.		
1 .		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshe	е 0	
1 .		of the accompanying Suppinfo file, during their nesting season (May-July for most species).		
ш.		None of the above, or no data.	0	
		In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
(IBA	A)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31 Bla	ack Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0101 Did		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	Ů	mis has provided by Sr. Sana Costo. [11511]
		>30 (enter 3). If outside of region shown in map, change to blank .	1	
			<u> </u>	
		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
Cor	ncentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	1	
			1	
OF33 Oth	her Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	esignation	with Geords, click on Candidate Piva Map viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	U	lı ol
Des	agriduuri	natural Area but also include it the AA is all of part of an area designated by government, First nations, of the nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC a	J	
		Canada (NCC) for its exceptional ecological reatures or nignly infact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC a agencies for more recent information.	1	
				la de la companya del companya de la companya de la companya del companya de la companya del la companya de la
OF34 Cor		The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlblank (not	1	
		0).		
OF35 Miti	tigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	1	
OF36 Sus	stained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
51 50 Sus		riants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	Ů	l ¹ → 1
		me public. Or the AA is part of an area that has been designated by an agency of institution as a benchmark, reference, or status-frends monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t oblank .	1	
		The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
OF37 Cal				http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF37 Cal		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and		
OF37 Cal				
OF37 Car		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and		
	-	moderalely calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tollank.		
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
	vnership	moderalely calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tollank.		"Private lands" may include those owned or leased by non-governmental organizations, e.g., charitable conservation land trusts, DUC, TNC. [PU, STR]
	wnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change (bhank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available.	0	
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change (blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change (bhank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available.		
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change (bdnank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber avaivest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter conditions.		
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited. Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change (bdnank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber avaivest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter conditions.		
	vnership	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited. Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	

Form OF Non-tidal

Date: 14 October 2019 Site Identifier: BB-Trib6-W-01 Investigator: Derrick Mitc

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons, and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS=Water Storage & Delay, SFS= Stream Flow Support, WC=Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves.
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador lea) or other acid-lolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cotlongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		Regulation for such as full straining (e.g., existing pose of mostposity). B2. Not B1. Tree & fall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bufursh, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA shi include " adja e descrii	ould also include part of t e the open water part adj cent " is used synonymou bed features along their o	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should acent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the flirectly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
F2		If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
	Subordinate	DO NOI maix again the type marked in F1. A1.	0	
		A2.	0	
		B1. B2.	0	
F3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if -5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is ~25% moss, then question F1 might be "811". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 2	accessinables is \$25.0 moss, and question in impire be bit. [65, inv., inv., in, index, some, some
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
Note:	•	F3 was marked 2 or greater, SKIP to F9 (N fixers). Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover. Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub	those species together comprise > 50% of such cover.	0	i i i i o c, obin, ocioj
	Species	those species together do not comprise > 50% of such cover.	1	
F5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dib trees, to serve as a basis for the minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	species. [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	1	
F6	Height Class	Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
	Intercorreion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		. , , , , , , , , , ,
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1	
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
F7	Large Snags (Dead	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	ut reast 2 in tail. [FOL, 3000, WDN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0	
F8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is:		Exclude temporary "burn piles." [AM, INV, POL, SBM]
		Few or none that meet these criteria.	0	
		Several (>5 if AA is >5 hectares, less for smaller AAs) meet these criteria.	1	

FieldF form - Non-tidal Page 1 of 5

F9	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
		is:		3.3
		<1% or none. 1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F40		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	E I I I I I I I I I I I I I I I I I I I
F10	Sphagnum Moss Extent	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller sedges and other plants rooted in it, is:		Exclude moss growing on trees and rocks. [CS, PH]
	Extori	<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	1	
		AA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA.		
		Other conditions.	0	
F12	Ground Irregularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,	0	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
	, ,	raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered). Intermediate.	0	
		Intermediate. Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA).	1	
F14	Soil Texture	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA). In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	0	[CS, NR, OE, PH, PR, Sens, SFS, WS]
F14	Soil Texture	in parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [70 determine this, use a flower to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sells, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	_	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	1	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
F16	Hh	>10,000 sq. m. In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
1 10	Herbaceous % of Vegetated Wetland			[AW, WOI , WOIV]
	3	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
F17	Fort Course	>95% of the vegetated part of the AA. Within parts of the AA having harbacours sover (excluding SAA), the areal cover of forths reaches an appual maximum of	0	Forbs are flavoring plants. Do not include grasses, codess, cottail other graminoids, forms, horsetails
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		-5% of the herbaceous part of the AA. 5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
F10	Codgo Cour-	>95% of the herbaceous part of the AA.	0	[cc]
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		45% of the vegetated area, or none. 5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. The species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invacing Cover Nega	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant	0	If a plant cannot be identified to species (e.g. winter conditions) but its convergencies on a sufficient
F21	Invasive Cover Along Upland Edge	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	1	none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	most (>50%) or the upiand edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
	J	vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

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F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by	
	Surface Water	rainstorms), but which is still a wetland, is:		10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]	
		<1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally. 1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	-	
		25-50% of the AA never contains surface water.	0	1	
		50-75% of the AA never contains surface water.	0		
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1		
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0		
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:	5	If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]	
	vaci	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0		
		1-20% of the AA.	1		
		20-50% of the AA. 50-95% of the AA.	0		
		>95% of the AA. True for many fringe wetlands.	0	1	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are		[FA, WC]	
	Water that Is Shaded	within the AA at that time is:	0		
		-5% of the water is shaded, or no surface water is present then. 5-25% of the water is shaded.	0	-	
		25-50% of the water is shaded.	0	1	
		50-75% of the water is shaded.	0		
F07	0/ 644 11 11	>75% of the water is shaded.	1		
F27	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)	
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the	
		1-20% of the AA, of < 1% but >0.01 na. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]	
		50-95% of the AA.	0	oc, i ii, ok, noi , noit, noj	
		>95% of the AA.	1		
F28	Annual Water Fluctuation Range	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,	
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]	
		10 cm - 50 cm change. 0.5 - 1 m change.	0		
		1-2 m change.	0	1	
		>2 m change.	0		
	AA plus adjacent ponded ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0		
	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and	
	Class	AA, is: <10 cm deep (but >0).	1	safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or	
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth	
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]	
		1 - 2 m deep.	0	well as pullued aleas. [C3, FN, FR, IIIV, OE, FTI, FR, Sells, SLS, SK, WDL, WDR, WG]	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,	
1 30	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]	
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	1		
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0		
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]	
	3/	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0		
		5-30% of the water.	1		
		30-70% of the water. 70-95% of the water.	0	-	
		>95% of the water.	0	1	
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest paich of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.	
F33		In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]	
	tilat is Open	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0		
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0		
		5-30% of the ponded water.	0	-	
		30-70% of the ponded water. 70-99% of the ponded water.	0	1	
		100% of the ponded water.	0	1	
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may	
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]	
		1 · 9 m.	0		
		10 - 29 m.	0		
		30 - 49 m.	0		
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1	
F35		During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	Ů	If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope, [SR, WBN]	
		<1% of the water edge.	0		
		1-25% of the water edge.	0]	
		25-50% of the water edge.	0	-	
		50-75% of the water edge. >75% of the water edge.	0	1	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush	J	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water	
		is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	surface during most of the time water is present. [WBN]	
		1-25% of the emergent vegetation, or emergent vegetation is absent. SALF to 136.	0	1	
		25-75% of the emergent vegetation.	0]	
		>75%, of the emergent vegetation.	0		

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open		0	
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	1
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	1
F38	Persistent Deepwater Area	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection).	0	
F39	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwate wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	†
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m or all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	n O	[WBN]
F41	Floating Algae & Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: if the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.]		Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Persistent (surface water flows out for >9 months/year). Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	,,
		Temporary (surface water flows out for <14 days, not necessarily consecutive).	0	1
		None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH Measurement).	0	
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:	0	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season. Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the wetland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA splils into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45		further upslope. If no, SKIP to F47 (pH Measurement). Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface	0	[WCv]
F40	Input Water Temperature	based on lack of shabe, water source characteristics, or actual temperature measurements, the limitow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	Ü	[mca]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	ivesistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
	•	Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig hole or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/t. in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in uSicm in the column to the right.]		
		Conductivity is [Enter tine reading in ps.cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	1
10		Neither of above	1	IFA FD DIL CDM C WDF WDM
49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
ee.	0 1	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA	, 0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	0	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	targe (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
		>10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
adjace	nt. In many situations, t	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are hese questions are best answered by measuring from aerial images.		
adjace	nt. In many situations, to Vegetated Buffer as %	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are hese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
adjace	nt. In many situations, t	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are hese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.	0	[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
adjace	nt. In many situations, to Vegetated Buffer as %	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are hese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: 45%. 5 to 30%.	0	[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
adjace	nt. In many situations, to Vegetated Buffer as %	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are hese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.	0	[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]

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F53	Type of Cover in	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
. 00	Buffer	main of it appropries into the included administrate appeared and correct additional personnel regulation is income (main only).		pun, r. n, mar, mar, r. n, r. o.c., o.o.m, o.r.n, mony
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
F54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%.	1	
		>30%.	0	
F55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den	0	Do not include upturned trees as potential den sites. [POL, SBM]
		areas. Enter 1 (yes) or 0 (no).		
F56	New or Expanded	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS
	Wetland	previously was none (e.g., by excavation, impoundment):		NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expansed within 20 years or not.	0	
F57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	,	Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
F58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:	- 1	
		<25%. 25-50%.	0	
		>50%.	0	
F59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	Potential	water and dense shrub thickets.		
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
		5	-	
F60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the		
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
F61	Frequently Visited	>95% of the AA with or without inhabited building nearby. The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: See note	1	[AM, PH, PU, SBM, STR, WBF, WBN]
	Area	above.]		pun, m. o, oon, om, mor
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	
F62	BMP - Soils	>95% of the AA. Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on	0	[PH, PU]
1 02	DIVIF - SUIIS	soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	U	[[-11,1-0]
F63	BMP - Wildlife	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets,	0	[AM, PU, WBF, WBN]
	Protection	and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance		
		of wildlife (except during hunting seasons). Enter "1" if true.		The second secon
F64	Consumptive Uses (Provisioning Sociess)	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Frovisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	
		Waterfowl hunting. Fishing.	0	
		Trapping of furbearers.	0	
		None of the above.	1	
F65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	
		>500 m. away, or no information.	1	
F66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplinfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to identify those and no information, change to blank.		

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gator: Derrick Mitchell	Site Identifier: BB-Trib6-W-01	Da	ate: 14 October 2019	
essor (S) Data Form for Non-T	Tidal Wetlands. WESP-AC for New B	runswick, Version 2.		Det
Aberrant Timing of Water Inputs	Tidal Wollands: W261 A6 161 Now B	Turiowick. Voloion 2.		Dat
	t is likely to have caused the timing of water inputs (but not necessarily thei	r valuma) to chiff by hours, days, or wooks, becoming either more n	mutad (cmaller or loce frequent peaks enread over longer time	
	e flashy (larger or more frequent spikes but over shorter times). [FA, FR, IN		nuieu (smaiiei oi iess irequeni peaks spieau ovei iongei iime	
Stormwater from impervious surfaces that drains directly to	o the wetland.			1
Water subsidies from wastewater effluent, septic system le	eakage, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or	other consumptive use.			
Flow regulation in tributaries or water level regulation in adj	djoining water body, or other control structure at water entry points that regu	lates inflow to the wetland.		1
A dam, dike, levee, weir, berm, or fill within or downgradi	lient from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond,	dead-end ditch.			
Artificial drains or ditches in or near the wetland.				
· · · · · · · · · · · · · · · · · · ·	or internal channel (incised below the historical water table level).			
Logging within the wetland.				
'	result of machinery, livestock, fire, drainage, or off road vehicles.			
Straightening, ditching, dredging, and/or lining of tributary of				
	table below, assign points. However, if you believe the checked items had r In the condition if the checked items never occurred or were no longer prese		une AA, unen leave the US Tor the scores in the following	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began w	within past 10 years, and only for the part of the wetland that experiences th	nose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
J .			Sum=	
Stormwater or wastewater effluent (including failing septic septions). Metals & chemical wastes from mining, shooting ranges, sr	ccurring in either the wetland or its CA that is likely to have accelerated the			
In the last column, place a check mark next to any item oc Stormwater or wastewater effluent (including failing septic s	ccurring in either the wetland or its CA that is likely to have accelerated to systems), landfills, industrial facilities.		[R]	
In the last column, place a check mark next to any item oc Stormwater or wastewater effluent (including failing septic s Metals & chemical wastes from mining, shooting ranges, sr npri/default.asp?lang=En&n=B85A1846-1	ccurring in either the wetland or its CA that is likely to have accelerated to systems), landfills, industrial facilities. systems), landfills, industrial facilities. now storage areas, oil/ gas extraction, other sources (download many local)		[R]	
In the last column, place a check mark next to any item — oc Stormwater or wastewater effluent (including failing septic. Stormwater or wastewater effluent (including failing septic. Metals & chemical wastes from mining, shooting ranges, sr pridefault asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, road If any items were checked above, then for each row of the Iz	ccurring in either the wetland or its CA that is likely to have accelerated to systems), landfills, industrial facilities. snow storage areas, oil/ gas extraction, other sources (download many local discussion) and the case of the	tions from National Pollutant Release Inventory and view KMZ overl of cumulatively expose the AA to significantly higher levels of contain	R/ lay in Google Earth. https://www.ec.gc.ca/inrp-	
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FieldS form Non-tidal 1

S4	Excessive Sediment Loading from Contribu	ting Area					
	In the last column, place a check mark next to any item present in the	e CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]			
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.							
	Erosion from construction, in-channel machinery in the CA.						
	Erosion from off-road vehicles in the CA.						
	Erosion from livestock or foot traffic in the CA.						
	Stormwater or wastewater effluent.						
	Sediment from road sanding, gravel mining, other mining, oil/ gas ex	draction.			1		
	Accelerated channel downcutting or headcutting of tributaries due to	altered land use.					
	Other human-related disturbances within the CA.						
	If any items were checked above, then for each row of the table below then leave the "O's" for the scores in the following rows. To estimate of			add significantly more sediment or suspended solids to the AA,			
		Severe (3 points)	Medium (2 points)	Mild (1 point)			
	Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0		
	Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	0		
	Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	0		
	AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	0		
	* high-intensity= extensive off-road vehicle use, plowing, grading, exc	cavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0		
	soil or sediment.						
				Stressor subscore=	0.00		
S5	Soil or Sediment Alteration Within the Asses	ssment Area					
	In the last column, place a check mark next to any item present in the is less). [CS, INV, NR, PH, SR, STR]	e wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pas	st 100 years or since wetland was created or restored (whichever	1		
	Compaction from machinery, off-road vehicles, livestock, or mountain	in bikes, especially during wetter periods.					
	Leveling or other grading not to the natural contour.						
	Tillage, plowing (but excluding disking for enhancement of native pla	ants).					
	Fill or riprap, excluding small amounts of upland soils containing org	anic amendments (compost, etc.) or small amounts of topsoil im	ported from another wetland.				
	Excavation.						
	Ditch cleaning or dredging in or adjacent to the wetland.						
	Boat traffic in or adjacent to the wetland and sufficient to cause short	e erosion or stir bottom sediments.					
	Artificial water level or flow manipulations sufficient to cause erosion	or stir bottom sediments.					
	If any items were checked above, then for each row of the table below effects, contrast the current condition with the condition if the checked		not measurably alter the soil structure and/or topography, then lea	ve the "O's" for the scores in the following rows. To estimate			
Severe (3 points) Medium (2 points) Mild (1 point)							
	Spatial extent of altered soil:	>95% of wetland or >95% of its upland edge (if any).	5-95% of wetland or 5-95% of its upland edge (if any).	<5% of wetland and <5% of its upland edge (if any).			
	Recentness of significant soil alteration in wetland:	Current & ongoing.	1-12 months ago.	>1 yr ago.			
	Duration:	Long-lasting, minimal veg recovery.	Long-lasting but mostly revegetated.	Short-term, revegetated, not intense.			
	Timing of soil alteration:	Frequent and year-round.	Frequent but mostly seasonal.	Mainly during one-time or scattered events.			
				Sum=	0		
	Stressor subscore						

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-Trib6-W-01

Date: 14 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.181083, -66.206548

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	(raw)
Water Storage & Delay (WS)	2.93	Moderate	1.68	Lower	3.99	1.75
Stream Flow Support (SFS)	6.25	Moderate	3.06	Moderate	3.33	1.78
Water Cooling (WC)	6.38	Higher	3.21	Moderate	4.25	1.93
Sediment Retention & Stabilisation (SR)	2.18	Moderate	1.69	Lower	4.65	1.02
Phosphorus Retention (PR)	3.10	Moderate	1.24	Lower	5.10	1.46
Nitrate Removal & Retention (NR)	0.84	Lower	4.94	Moderate	4.35	5.50
Carbon Sequestration (CS)	6.08	Higher			7.18	
Organic Nutrient Export (OE)	7.80	Higher			6.47	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	2.34	Lower	3.78	Moderate	4.70	3.28
Amphibian & Turtle Habitat (AM)	5.19	Moderate	4.24	Moderate	6.04	4.66
Waterbird Feeding Habitat (WBF)	4.71	Moderate	2.50	Moderate	3.74	2.50
Waterbird Nesting Habitat (WBN)	2.54	Moderate	2.50	Moderate	2.17	2.50
Songbird, Raptor, & Mammal Habitat (SBM)	9.34	Higher	2.50	Lower	7.75	2.50
Pollinator Habitat (POL)	10.00	Higher	0.00	Lower	9.25	0.00
Native Plant Habitat (PH)	7.07	Higher	6.53	Higher	5.94	5.67
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.00	Lower		2.00
Wetland Ecological Condition (EC)			7.59	Higher		8.61
Wetland Stressors (STR) (higher score means more stress)			4.52	Moderate		3.92
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	6.25	Higher	1.68	Lower	3.99	1.75
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	2.57	Lower	3.78	Lower	6.25	4.08
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.75	Higher	3.57	Moderate	5.58	2.81
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	3.84	Moderate	3.04	Lower	4.22	3.30
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.40	Higher	4.77	Moderate	8.45	4.19
WETLAND CONDITION (EC)			7.59	Higher		8.61
WETLAND RISK (average of Sensitivity & Stressors)			2.26	Lower		2.96

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2	
Site Name:	Burchill Wind Energy Project - FC-Trib2-W-02	
Investigator Name:	Derrick Mitchell	
Date of Field Assessment:	14 October 2019	
Nearest Town:	Lorneville (west Saint John), New Brunswick	
Latitude (decimal degrees):	45.192947	
Longitude (decimal degrees):	-66.206379	
Is a map based on a formal on-site wetland delineation available?	Yes	
Approximate size of the Assessment Area (AA, in hectares):		
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.		
What percent (approx.) of the wetland were you able to visit?	100	
What percent (approx.) of the AA were you able to visit?	100	
Were you able to ask the site owner/manager about any of the questions?	No	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	Yes	
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Yes, September 2016	
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+	
Comments about the site or this WESP-AC assessment (attach extra page if desired):		

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

The State State The S	#	Indicators	Condition Choices	Data	Definitions/Explanations
And the desiration of the control of	F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
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The control of the			Prince Edward Island	0	
Office and process of the common of the comm			Newfoundland-Labrador	0	
List of a treatment of the company o	2		The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
Edit Call Sections Edit 1 - The closes Edit 2 - The closes Edit 1 - The closes Edit 2 - The closes and closes			<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
11-1 Thorons 12-1 Thorons 13-1				0	
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The state of weather and surface and produced during most of the gening socion that is both (1) in or algored to the AM and C2 with a state of the s			1 to 10 hectares.	0	
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Section William Section Sectio			>100 hectares.	- 1	
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So m, and not separated from the 375-ha vegetation (and such sections of age to a section of completely separated from the 275-ha vegetation (This is often the answer in relatively undeveloped landscape as on a section of the secti	5	Distance to Large			To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
wom, or improvious surface. Or the AN best contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.] -50 m. but completely separated from the 375 ha wegetated area by those features, and AA does not contain >375 ha of vegetation. -50 5.5 m. but completely separated from the 375 ha wegetated area by those features50 5.5 m. and not separated50 5.5 m.		Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated m, and an experiment with the part of the separated. 9-500 m, and not separated m, and an experiment with the separated by the section by the separated by the section by th				1 s.]	
South Separated by those features 15.5 km, and not separated 15.5 km			<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
Distance by Road of Ward Cover Percentage Local Vegetated Cover Percentage Type of Land Cover Min the SA's wegetation for the content part of the Local Standard Cover Percentage Local Vegetation Cover is 5-10% woody but uplands within 15 km have <10% woody cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous but uplands within 16 km have <10% herbaceous cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous will as grassifile plants in this use of herbaceous wegetation. Prover is 5-10% herbaceous will uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1" in Notice to was a structure of the AA's vegetation cover is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider. The AA's vegetation is 5-10% woody but uplands within 100 m of the we			50-500 m, and not separated.	0	1
S - S km, but separated by those features 0			50-500 m, but separated by those features.	0	1
Need of the above (the closest patches or confidors which are that large are 5 km away). Hetbaceous Uniqueness The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '3' and continue to O'. If not, consider. The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% hetbaceous's but uplands within 10m of the wetland edge have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% herbaceous's but uplands within 10m of the wetland edge have <10% herbacous vegetation. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland ed			0.5 - 5 km, and not separated.	0	
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OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover. If see a shrubs taller than 1 m.] In Coole Vegetatied Cover Percentage The AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is >			None of the above (the closest patches or corridors which are that large are >5 km away).	0	
consider: The AN's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AN's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrush staller than 1 m.] Local Vegetated Cover Percentage Percentage Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land50 to 50% of the land50 to 50% of the land50 to 90% of the land50 within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Mithin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: 100 m50 to 500 m50 to	6	Herbaceous Uniqueness	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, I
The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Torau a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 10 cools of the land. 20 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 30 of 10 e90% of the land. 30 of 10 e90% of the land. 30 of the land. 40 of 10 e90% of the land. 40 of 10 e9	7	Woody Uniqueness		0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Percentage Percentage Percentage Procentage Percentage Procentage P			The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 00 to 90% of the land. 00 to 90% of the land. 00 ver Alteration Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. 10 Stance by Road to Nearest Population Center Cen			The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. SKIP to OF10. Type of Land Cover Alteration The provious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center 100 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 1-5 km. 1-5 km. 100 m. 1-5 km.	8				In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. SKIP to OF10. Type of Land Cover Alteration The provious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center 100 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 1-5 km. 1-5 km. 100 m. 1-5 km.			S:		
20 to 60% of the land. 60 to 90% of the land. SKIP to OF10. Type of Land Cover Alteration Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confer plantalion. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 m			<5% of the land.	0	
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- 590% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 - 500 m. 0.5 1 km. 1 - 5 km. 1 - 5 km.					
Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center On the content of the c				0	
Alteration Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Nearrest Population Center Center 100 m. 100 - 500 m. 0.5 + 1 km. 1 - 5 km.				1	
Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (c5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Distance by Road to Nearest Population Center 100 m.	9		Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center Population cen		Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, the Hall, and daw and measure tender in 100 - 500 m. Output Output Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited square kilometer. In Coogle				0	1
Nearest Population Center 100 m. square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure rore from the control of the co	10	Distance by Road to			"Population center" means a settled area with more than about 5 regularly-inhabited structures r
Centler 100 m. 0 route. Or use the GeoNB's Draw & Measure loot Freehand Line to draw and measure the route 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlements of the meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1 - 5 km. 1			· · · · · · · · · · · · · · · · · · ·		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
0.5-1 km. 0 which meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1-5 km. 1					route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
1 - 5 km.					Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
				0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
⊳5 km. 0				1	
			>5 km.	0	

OF11	Distance to Name to	From the center of the AA, the distance to the proceed maintained as the second of the AA.	1	Determine this by viewing social imagery in Coogle Earth and measuring with the Pulers Line I		
UFII	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:	_	Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]		
		<10 m. 10 - 25 m.	0			
		10 - 25 m. 25 - 50 m.	1			
		50 - 100 m.	0			
		100 - 500 m.	0			
OE12	Wildlife Access	>500 m. Draw a circle of radius of 5 km from the center of the AA If mammals and amphibians can moun from the center of the AA to ALL other.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an		
UF12	wildille Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	If the, entable the Weithous Sayer in Geome (despite its offissions) to show surfounding weitards and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]		
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel		
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]		
		<50 m, but completely separated by those features.	0			
		50-500 m, and not separated.	1			
		50-500 m, but separated by those features. 0.5 - 1 km, and not separated.	0			
		0.5 - 1 km, but separated by those features.	0			
		None of the above (the closest patches or corridors that large are >1 km away).	0			
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]		
		<100 m.	0			
		100 m - 1 km.	1			
		1 - 2 km. 2-5 km.	0	-		
		2-5 km. 5-10 km.	0			
		>10 km.	0	1		
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever		
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local		
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]		
		1 - 5 km. 5-10 km.	0			
		10-40 km.	0			
		>40 km.	0			
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]		
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0			
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0			
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0			
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0			
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1			
OF17	Flood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu		
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood		
		surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases	0	modeling. [WSv]		
		levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0			
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable	1			
OF18	Relative Elevation in	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB. Watersheds KMZ file that accompanies this calculator. Then		IFA. NR. Sens. SFSv. WCv. WSvI		
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.20			
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]		
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,		
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]		
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0			
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0			
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1			
OF21	Dograded Water	all wetlands in this region. The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]		
UFZI	Degraded Water Downstream			may use existing uata, or mornior waters as part or this wettand assessment. [tvkv, Pkv, Skv]		
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0			
		channel.				
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0			
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1			
OF22	Wetland as a % of its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]		
		0.01 to 0.1. 0.1 to 1.	0			
		v. i to i. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raisec	0	1		
UE33	Unvegetated Surface in	tog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]		
J1 23	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about :		g. r., ma, ma, ma, ma, ma, may		
		<10%. 10 to 25%.	0			
		>25%.	0	1		
				t		

Comparison of the present	OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
So you also has been engined. The source of the second of			indicated by the following: (a) input channel is present		
Section of the control of the cont			(b) input channels have been straightened,		
1					
Bind CAS be available ploated, test and racing what the high and contributes 1					
Rely In the Comment of the Comment o			(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
Somewhat traits. Compared to the contraction of			This statement is:		
Second Proceedings of the control from securities which is a second process subsection of many subsections of many subsectio			Mostly true.	0	
See a control for deviction of most under some risk in season, seek or an experiment plant with the seek of the season of the se			Somewhat true.	0	
Section (No. 1997) And security of the section of t			Mostly untrue.	1	
Some Service	OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
The EST No. Will be proposed as a process of the company of the co				0	
Section of Concession Proceedings Proceedings Procession Pro			11 7 0	0	
Pink Lungship 19th	0527	latara I Flam Diatara		1	
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Public P				1	
Section Description Section Communication Section Sect				0	
and and disk. From the populge, earth the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next column. A Contriging is apply about the CRIDICODE in the next columns are column. A Contriging is apply about the CRIDICODE in the next columns are columns are column. A Contriging is apply about the CRIDICODE in the next columns are columns are columns. A CRIDICODE in the CRIDICODE in the next columns are columns are columns are columns. A CRIDICODE in the CRIDICODE in the columns are columns are columns are columns are columns. A CRIDICODE in the CRIDICODE in the columns are columns are columns are columns are columns. A CRIDICODE in the CRIDICODE in the columns are columns are columns are columns. A CRIDICODE in the CRIDICODE in the columns are columns are columns are columns are columns. A CRIDICODE in the CRIDICODE in the columns are columns a			>2 km, or wetland lacks an inlet and outlet.	0	
Second and Proceedings of Secondary (1997) Seco	OF27	Growing Degree Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	
Property of page of control graphing control specified sequency of Adards among other productions of Specific Control (1997)	OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been chosen up NP, the list of sheeked waters in at
Append A of the Manual. Control call of the place special case in the "Inspiration combination combina				0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
Security of the contained and separated and separated processes and proceedings concentration to make years and proceedings of the contained Alland's plant species and proceedings of the contained and procedings of the contained and proc					aters.html
summor other anatomous openiors or do and is protechly and consecuted by manufactories of Sproached by the control				0	[AM, FA, FR, INV, WBF, WBN]
Species of Conservative Within the past 10 years, in the AR (or in 5 adjoining waters or welland), qualified discoveres have documented privated and applicable approached from the Concentration of				U	
Section of Conservation White the part of by years in the Adj or this adjoining waters or welfund), qualified decreases have documented and applicability Experience of one or more of the plant species listed in the Plants, Pare worksheet of the Prosecut of one or more of the interpolation or repulles species (MM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the melanguagesplant or repute species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the configuration of the recting secure (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the excent of the subject will be the concernance of the subject will be a concernance of the subject will be the concernance of the subject will be the process of the subject will be the process of the subject will be the s				0	
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Procedure of one of make of the parts species leaded in the Parts, Year worknessed of the Scorphaphy Supprison Be, of the As a within a supprison of the Suppri		Concern			
scoropanying Supplied (le. Presented for one more of the advantage) species (SME), WEW) of conservation concern as Island in the Wildlie, Bare worksheet of the Presented for one more of the internal present plant of the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the source of this layer, which should be checked periodically for updates, its May July of the accompanies the calculator, calcul				0	
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			Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 14 October 2019	Site Identifier: FC-Trib2-W-02	Investig	ator:	Derrick Mitc	he

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	India-4	Condition Chalana	Dete	Pofinitions /F
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog caraberry, pilcher plant, sudew, or cribids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
A shi nclude adja d lescrii	ould also include part of the open water part ad cent " is used synonymo bed features along their	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should [jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this da form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	National Trans			1 July 1 1000
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include butlonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. I you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	5	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
ote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
1	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	0	
1	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	1	Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie
		coniferous, 1-9 cm diameter and >1 m tall.	0	[AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	0	E
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	0 1	······································
		coniierous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1 1 0 0	
	Haight Class	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 2-80 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 2-80 cm diameter.	1 1 0 0	
6	Height Class Interspersion	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1 1 0 0	[AM, INV, NR, PH, SBM, Sens]
5		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1 0 0 0 0	
5		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	1 0 0 0 0	
ò		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1 0 0 0 0	
6		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >20-40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	1 1 0 0 0 0 0	
6	Interspersion	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1 0 0 0 0 0	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 240 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the welland edge is:	1 1 0 0 0 0 0	[AM, INV, NR, PH, SBM, Sens]
6	Interspersion Large Snags (Dead	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 240 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 240 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	1 0 0 0 0 0 0	[AM, INV, NR, PH, SBM, Sens] Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
7	Interspersion Large Snags (Dead Standing Trees)	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 20-40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	1 0 0 0 0 0 0	[AM, INV, NR, PH, SBM, Sens] Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 0 0 0 0 0 0 0	[AM, INV, NR, PH, SBM, Sens] Snags are dead standing trees that often (not always) lack bank and foliage. Include only ones that a

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NY INTINING ANGLE OF INCIDENTS. [F.A, F.N., INVV, INVV, O.E., F.N., SEIN, SEINS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
		Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
E14	Coll Touture	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	[CC MD OF DIJ DD Core CEC M/C]
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Charabird Fooding	between thumb and forefinger.		This addresses peads of many but not all migratory conditions players and solated exector (MDE)
FID	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
E1/	11-4	>10,000 sq. m.	0	TAM MIDE MIDNI
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	3	45% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	1	
		50-95% of the herbaceous part of the AA. >95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (<i>Carex</i> spp.) and cottongrass (<i>Eriophorum</i> spp.) occupy:	Ť	[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of behaviour plants at any time during the year.	1	
	Species .	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
Ean	Imposing Direct C			IEC DU DOI Sans
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	1
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	0	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.	L	
		The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23	Lacustrine Wetland	a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Paul, I.A., I.K., III49]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	1	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
544	T. 1. Ol. 1.	drain the wetland artificially, or water is pumped out of the AA.		If in the state of the AA fellows
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Was not measured, but plants that indicate saline conditions cover much or the vegetated AAL criter 1. Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
TEO.	Croundy-t C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult logorgaphic maps to detect breaks in Jospe described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE4	Internal Condin	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charoline along the the about the state of
F51	Internal Gradient	The gradient along most of the flow path within the AA is: <8 or the AA has no surface water outlet (not even seasonally).	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% of the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note for	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
	nt. In many situations, th	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m talerally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		, , , ,,,,, son, son, son, son, the
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%.	1	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	<u> </u>

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in buller			, , , , , , , , , , , , , , , , , , , ,
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	1	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
		that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	0	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	1	
		25-50%.	0	
		>50%.	0	
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	rotential	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	Onvision Coronica	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		, , , , , , , , , , , , , , , , , , , ,
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	0	1
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pels, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0]
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
,				(DLL DD)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying SuppInfo file for list of plant indicators	0	[PH, PR]

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igator: Derrick Mitchell	Site Identifier: FC-Trib2-W-02	D.	ate: 14 October 2019				
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2					
Aberrant Timing of Water Inputs	Wetterland. Weer Ad for New B	Turiowick: Voloion 2.					
	the standard of the standard o						
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nutea (smaller of less frequent peaks spread over longer time:				
Stormwater from impervious surfaces that drains directly to the wetla	and.						
Water subsidies from wastewater effluent, septic system leakage, sn	ow storage areas, or irrigation.						
Regular removal of surface or groundwater for irrigation or other con	sumptive use.						
Flow regulation in tributaries or water level regulation in adjoining wa	iter body, or other control structure at water entry points that regu	ulates inflow to the wetland.					
A dam, dike, levee, weir, berm, or fill within or downgradient from t		t of the AA (e.g., road fill, wellpads, pipelines).					
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	ditch.						
Artificial drains or ditches in or near the wetland.							
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).						
Logging within the wetland.	poshinory livesteek fire drainage or off read vehicles						
Subsidence or compaction of the wetland's substrate as a result of n Straightening, ditching, dredging, and/or lining of tributary channels.	lacilinery, livestock, life, drainage, or on road verticles.						
If any items were checked above, then for each row of the table below	w assign noints. However if you helieve the checked items had a	no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row				
To estimate effects, contrast the current condition with the condition if		to measurable effect on the lifting of water conditions in any part of	i the AA, then leave the "03" for the scores in the following for				
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.				
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.				
Score the following 2 rows only if the altered inputs began within past			200				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.				
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.				
			Sum=				
Stressor subscore=							
Accelerated Inputs of Contaminants and/or \$ In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems),	either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	,	RJ				
In the last column, place a check mark next to any item occurring in	either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	,	RJ				
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present in the CA that is likely to have elevated the load of waterborne or windborne sediment reaching the wetland from its CA. [FA, FR, INV, PH, SRv, STR]								
Erosion from plowed fields, fill, limber harvest, dirt roads, vegetation clearing, fires.								
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.								
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.							
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.							
Other human-related disturbances within the CA.								
If any items were checked above, then for each row of the table below, assign points (3, 2, or 1 as shown in header) in the last column. However, if you believe the checked items did not cumulatively add significantly more sediment or suspended solids to the AA, then leave the "Os" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.								
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.					
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.					
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.					
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.					
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=					
			Stressor subscore=	U.				
	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.0				
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib2-W-02

Date: 14 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.192947, -66.206379

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

compated.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.71	Higher	0.42	Lower	6.12	0.50
Stream Flow Support (SFS)	2.40	Lower	3.27	Moderate	1.28	1.91
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	5.13	Moderate	1.45	Lower	6.67	0.88
Phosphorus Retention (PR)	4.81	Higher	1.09	Lower	6.31	1.32
Nitrate Removal & Retention (NR)	3.17	Moderate	4.56	Moderate	5.78	5.17
Carbon Sequestration (CS)	7.00	Higher			7.58	
Organic Nutrient Export (OE)	5.19	Moderate			5.09	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.47	Moderate	0.92	Moderate	5.45	1.74
Amphibian & Turtle Habitat (AM)	2.65	Lower	1.08	Lower	4.70	2.75
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.93	Moderate	2.50	Lower	5.75	2.50
Pollinator Habitat (POL)	7.54	Moderate	0.00	Lower	6.07	0.00
Native Plant Habitat (PH)	8.20	Higher	4.54	Moderate	6.39	3.94
Public Use & Recognition (PU)			2.23	Lower		1.92
Wetland Sensitivity (Sens)			0.40	Lower		2.32
Wetland Ecological Condition (EC)			4.22	Moderate		6.67
Wetland Stressors (STR) (higher score means more stress)			3.14	Moderate		3.41
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.40	Lower	0.42	Lower	6.12	0.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	4.75	Moderate	3.46	Lower	7.08	3.81
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.10	Moderate	2.34	Moderate	4.20	1.56
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.59	Lower	0.65	Lower	2.82	1.65
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.88	Higher	3.44	Moderate	6.23	3.04
WETLAND CONDITION (EC)			4.22	Moderate		6.67
WETLAND RISK (average of Sensitivity & Stressors)			1.77	Lower		2.87
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	ne wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - BB-Trib1-W-02
Investigator Name	Matt Alexander
Date of Field Assessment	11 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees)	45.178466
Longitude (decimal degrees)	66.210666
Is a map based on a formal on-site wetland delineation available	Yes
Approximate size of the Assessment Area (AA, in hectares)	0.68
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired)	Old apple orchard adjacent to this wetland next to Burchill Road. Former homestead existed in this area. Twentieth century garbage piles (bottles, cans, car parts, etc.) strewn about the forest.

Investigator: Matt Alexander

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-appsyapps-rc.asp For most wetdands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including rox >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measi tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	,
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	- 1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) targer than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sen:
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped.]	1 es.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation"]	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth flert successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMV, I POLV, SBMV, WBFV, WBNV]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AAT's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations)		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage	is:		
8	Percentage	is:		
В	Percentage	S:	0	
3	Percentage	ls: <5% of the land. 5 to 20% of the land.	0	
В	Percentage	s: -5% of the land50 to 60% of the land	0 0	
В	Percentage	ls: <5% of the land. 5 to 20% of the land.	0	
		IS: -5% of the land. 5 to 20% of the land. 2 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land90% of the land. SKIP to OF10.	0 0	IAM SBMI
	Percentage Type of Land Cover Alteration	Is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 50% of the land. 50% of the land. Within the S-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0	[AM, SBM]
	Type of Land Cover	s: -5% of the land. 50 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	[AM, SBM]
9	Type of Land Cover Alteration	s: -5% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land20 to 60% of the land60 to 90% of the land80% of the land80% of the land. SKIP to OF10	0 0 0 0	
9	Type of Land Cover Alteration Distance by Road to	s: -5% of the land. 50 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Type of Land Cover Alteration Distance by Road to Nearest Population	s: -5% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land20 to 60% of the land60 to 90% of the land80% of the land80% of the land. SKIP to OF10	0 0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to	s: -5% of the land5 to 20% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land20 to 60% of the land80% of the land8km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route.
9	Type of Land Cover Alteration Distance by Road to Nearest Population	Sc	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to Nearest Population	sc 5% of the land. 55% of the land. 50 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 60 to 90% of the land. 80% of the lan	0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11				
	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
	Walitalieu Rodu	<10 m.	0	use the George's Draw Line tool. [AW, FAV, FRV, INRV, FR, FU, SDW, STR, WDN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marrine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as w [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km. and not separated by those readiles.	0	
		0.5 - 1 km, but separated by those features.	- 1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	-
		100 m - 1 km. 1 - 2 km.	1	
		2-5 km.	0	1
		5-10 km.	0	1
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	- 1	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one: The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	[NR, SBM, Sens]
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the AA	A 0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	1
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	- 1	
OE17	Flood Damago from Mon	will be true for most assessments done with WESP-AC. Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the me
01 17	tidal Waters			under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Dat
		Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case	0 s 0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there isno infrastructure vulnerable for river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.18	[FA, NR, Sens, SFSv, WCv, WSv]
	Water Quality Sensitive	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	_	
OF19	Watershed or Area Degraded Water	Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
		Enter I = yes, v= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic wader, high temperatures) being present at levels harmful to aqualic life or humans, and:	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou
	Degraded Water	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou
	Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR:
	Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmett) indicates no problems in either the AA or inflowing		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. (AM, FA, FR, NR
	Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR:
	Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmett) indicates no problems in either the AA or inflowing	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv
OF20	Degraded Water Upstream Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR
OF20	Degraded Water Upstream	Samplinj indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0	May use existing data, or sample those waters as part of this welland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR: PRv, SRv, STR, WBF, WBN]
OF20	Degraded Water Upstream Degraded Water	Samplinj indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and:	0 0	May use existing data, or sample those waters as part of this welland assessment. "Harmful" sho be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR PRv, SRv, STR, WBF, WBN]
OF20	Degraded Water Upstream Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA listelf. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing	0 0 1	May use existing data, or sample those waters as part of this welland assessment. "Harmful" shot be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR PRV, SRV, STR, WBF, WBN]
DF20	Degraded Water Upstream Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low vater periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low vater periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0 0 1 0 0 0	May use existing data, or sample those waters as part of this welland assessment. "Harmful" shot be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR PRV, SRV, STR, WBF, WBN]
DF20	Degraded Water Upstream Degraded Water	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The admitted the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not		May use existing data, or sample those waters as part of this welland assessment. "Harmful" sho be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR PRv, SRv, STR, WBF, WBN]
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The state of the following is stated by the State of the		Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
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SEA Control Floric Castler Section 1. Secti				-	
Southward S. Still costs) Fig. Internal File Distance File The Dista	F25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
Southward S. Still costs) Fig. Internal File Distance File The Dista			N. H. (4) N. S.		
Security Collection				0	
County Days Burgs Days D			Southward (S, SW). south-facing contributing area.	1	
County Days Burgs Days D			Other (F. S.F. W. NW), or no detectable uphill slope or input channel (flat).	0	
The first in the country of the frequency of the first percent (NR. OF, PR. SK, WS) To Store T	F24	Internal Flow Distance			Identify inlets and outlets if any from tangaraphic mans (use elevations to determine which are inlet
1-0 m.			The horizontal now distance from the wedand's finet to outlet is.		
10-50 m. 20-100 m. 10-1000 m. 10-1000 m. 20-100 m. 20-10		(Path Length)	<10 m	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
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The Access of Lose Accessing to passe y begings and try or motionerships the NA (DM part for the choken that the Lose) A common to apport common and common sequence of the Common se	F27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PFL GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
National to appoint reading another speaming by Martins Castonia to this another control of the part			and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
S Form to support canning and/or speaming by Allenine Samon or other anabidomous species or eds. In NB, Consult Figure A. 2 in appoint and the Name Collection of the Action Speaming to 1 consultation had appointed and the Name Collection of the Action Speaming to 1 consultation had also the Action Speaming to 1 consultation had also the Name Collection of the Action Speaming to 1 consultation had been seen to 1 page and the Name Speaming to 1 consultation had been seen to 1 page and the Name Speaming to 1 consultation had been seen to 1 page and the Name of the Speaming to 1 consultation had been seen to 1 page and the Name of the Speaming to 1 consultation had been seen to 1 page and the Name of the Speaming to 1 consultation and the Speami	F28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been stocked. In NB, the list of stocked waters is at:
Appendix A of the Manual Contact Isolal Riskey biologists, review the ACCID Coppet, and visit these websides high lows washind contact in the Manual Contact Isolal Riskey Isolands and appendix and the Manual Contact Isolal Riskey Isolands and appendix and appendix and appendix and appendix passwaring by the contended in early water. Bits by isolands and appendix and anadomous species or send any probabily series and appendix processed by those during some conditions. In Processed Consecution. White the passwaring is appendix is the send of the last of the passwaring of the passwar			Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	
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Sample S		Plack Duck Moeting Area		0	This was provided by Dr. David Losko [WDNv]
Wintering Deer or Moose If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_Deer/WinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. PF34 Conservation Investment The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank (not 0). PF35 Mitigation Investment The AA is a part of a mitigation stell used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. PF36 Sustained Scientific Use Plants, animats, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. PF37 Calcareous Region The AA is in an area that has tal teast partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3), or slightly calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tablank. PF38 Ownership Select the ONE ownership tha		Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
Concentration Areas accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected Designation Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change iblank (not 0). With GeoNB, click on Candidate PNA Map Viewer to Identify provincially Significant Area, Protected On Severation Investment The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change iblank (not 0). With GeoNB, click on Candidate PNA Map Viewer to Identify to private organizations, in the Nature Conservancy of Canada (NCC) for its Pack as all or part of a mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change iblank (not 0). With GeoNB, click on Candidate PNA Map Viewer to Identify to Information, change iblank (not 0). PEAS Sustained Scientific Use Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change iblank . The AA is in an a		Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	0	This was provided by Dr. David Leske. [WBNV]
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	0F31 0F32 0F33 0F33	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank. If AAIs on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC a agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change loblank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animas, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change (bdank.) The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 3 in next column), moderately calcareous (enter 2), or s	0	[PU] [PU] [PU] [PU] [IFU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at
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charitable conservation land trusts. DUC. TNC 1PT STRE	DF31 DF32 DF34 DF36 DF37	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 230 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, Click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC a agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limeston	0	[SBM] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp. [AM, FA, FR, INV, PH]
anamado donastranon ana irabaj o doj mo. [i dj o mj	DF31 DF32 DF34 DF36 DF37	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of regions shown in map, change toblank. If AA is on private land with no information, change toblank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncortain, consult NCC a agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding miligation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is all or part of a miligation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Of the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3) in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limest	0	[PU] [PU] [PU] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	DF31 DF32 DF34 DF36 DF37	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of regions shown in map, change toblank. If AA is on private land with no information, change toblank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncortain, consult NCC a agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding miligation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is all or part of a miligation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Of the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3) in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limest	0	[SBM] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp. [AM, FA, FR, INV, PH]
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Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	DF31 DF32 DF34 DF36 DF37	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 20 (enter 3). If outside of region shown in map, change toblank. If AAIs on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC a agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change Ibblank. (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change Ibblank. (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change Ibblank, (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change Ibblank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change Ibblank. The AA is all or part of a mitigation site used explicitly to of	0 0 0 0	[PU] [PU] [PU] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
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Da	te: 11 September 2019	Site Identifier: BB-Trib1-W-02	Investig	gator: Ma	att Alex	xand	le
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	India-t	Condition States	Deta	Definitions /F
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
A sh nclud adja	ould also include part of e the open water part ad cent " is used synonymo	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should facent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout this aform, usly with abutting, adjoining, bordering, contiguous - and means no upland (mammade or natural) completely separates the		
		directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if -95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if -5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, the percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranbers, loudoberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. I you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	,
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	4	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
ote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
1	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
		broad-leaved deciduous >40 cm diameter.	0	
5	Height Class Interspersion	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each	0	[AM, INV, NR, PH, SBM, Sens]
5		Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
5		Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
6		Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	[AM, INV, NR, PH, SBM, Sens]
6		Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	[AM, INV, NR, PH, SBM, Sens]
7	Interspersion Large Snags (Dead	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
6	Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Lither the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0 1	
7	Interspersion Large Snags (Dead	Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
7	Interspersion Large Snags (Dead Standing Trees)	Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) but above not true.	0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INVINING AIGAE OF INCIDENS. [F.A., F.K., INV., INV., O.E., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is: <5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
F11	0/ Dara Cround 9	>95% of the vegetated part of the AA. Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the	0	Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
FII	% Bare Ground & Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		hu. bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA. Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guillies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered). Intermediate.	0	
		intermediate. Several (extensive micro-lopography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).] Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	U	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	riabilato	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
F16	Harbanaua (V. of	>10,000 sq. m.	0	[AM, WBF, WBN]
1 10	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[Aw, WDI , WDIV]
	3	45% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	of offices that tack showy horiess. It obj
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	
F19	Dominance of Most	Sys% or the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
		aquatic plants). Then choose one of the following:		,, ocjosisj
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		Woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot de lucililleu, answer indhe . [rm, 51K]
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
F00	A secondario 144 of	vegetated zone within the wetland. Enter "1" if true, "0" if false.		ITD DD DU MDE MDM
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of a normal year.	0	[FR, PR, PU, WBF, WBN]
		· · · · · · · · · · · · · · · · · · ·	•	

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwate
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[
F40	Indiated Island	Extensive. The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on	0	[WBN]
	Isolated Island	all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	Ü	
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	(EC, PR, WBF)
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these off with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	-
		Measurement). No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland,	0	
E42	0	ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	J	Maintan of market model and be a control of the con
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography)	0	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		that does not appear to drain the wetland artificially during most of the growing season.		
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the wetland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[wcv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L. in the column to the right, if measured, or answer next row.] Conductivity is: [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
1 47		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	(ra, ra, ra, sona, sona, wong
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.		
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
		Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	Neimer or above is true, aimough some groundwater may discharge to or now through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
		>10%.	0	SR, WBF, WBN, WS]
Note for		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.		
		Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	Vegetated Buffer as %			[MI, FA, FI, MV, MV, FI, FOE, FIV, SDM, SCIS, SIV, STI, WON]
adjacei		walling a zone exercing so in area any norm the AAS edge with uplantia and/or other weitaines, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, confer plantations) is: -5%.	0	(wii, 13, 13, 110, 110, 110, 100, 110, 110)
adjacei	Vegetated Buffer as %	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%. 5 to 30%.	0	pan, r., r., m., m., r., e., r., e., r., e., e., e., e., e., e., e., e., e., e
adjacei	Vegetated Buffer as %	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.		pan, 14, 14, 14, 14, 14, 15, 14, 55m, 55h, 544, 544, 164

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
	D # 01	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	(ND DD C CD)
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	1
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years.	0	1
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	U	[PU, STR]
0,	Uses - Actual or			[0, 0.11 ₄
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickels. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or requiar quided interpretive tours.	0	-
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the trait.)		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
7/1	F	>95% of the AA with or without inhabited building nearby.	1	IAM DIL DIL COM CTD WDF WDNI
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	riica	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
		Waterfowl hunting.	0]
		Fishing.	0	1
		Trapping of furbearers.	0	
65	Domestic Wells	None of the above. The closest wells or water bodies that currently provide drinking water are:	1	[NRv]
UU	Domestic Wells			pusy
		Within 0-100 m. of the AA.	0	4
		100-500 m. away. >500 m. away, or no information.	0	
			1	(ALL DR)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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	Site Identifier: BB-Trib1-W-02	D		
essor (S) Data Form for Non-Tid	lal Wetlands. WESP-AC for New B	runswick Version 2		
Aberrant Timing of Water Inputs	Totaliano. Web Ac lot Now B	Tanowick. Voloion 2.		
	kalu ta haya causad tha timing of water inputs (but not necessarily the	r valuma) to chiff by hours, days, or wooks, hosping oither more n	mutad (cmallar or loss fraquent peaks spread over langer time	
	kely to have caused the timing of water inputs (but not necessarily thei. hy (larger or more frequent spikes but over shorter times). [FA, FR, IN		nuteu (smaller or less frequent peaks spreau over longer times	
Stormwater from impervious surfaces that drains directly to the	wetland.			
Water subsidies from wastewater effluent, septic system leakage	ge, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or other	er consumptive use.			
Flow regulation in tributaries or water level regulation in adjoini	ng water body, or other control structure at water entry points that regu	lates inflow to the wetland.		
A dam, dike, levee, weir, berm, or fill within or downgradient	from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, dea	d-end ditch.			
Artificial drains or ditches in or near the wetland.				
Accelerated downcutting or channelization of an adjacent or int	ernal channel (incised below the historical water table level).			
Logging within the wetland.				
Subsidence or compaction of the wetland's substrate as a resu				
Straightening, ditching, dredging, and/or lining of tributary chan		no managerable offset on the timing of water conditions in any part of	f the AA then leave the "O's" for the season in the following row	
	below, assign points. However, if you believe the checked items had r tion if the checked items never occurred or were no longer present.	o measurable effect on the tilling of water conditions in any part of	i uie AA, uien leave lile US Tof the Scores III the following foll	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began within	past 10 years, and only for the part of the wetland that experiences the	ose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	L
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
			Sum=	
				-
In the last column, place a check mark next to any item occur Stormwater or wastewater effluent (including failing septic syste	ing in either the wetland or its CA that is likely to have accelerated tiems), landfills, industrial facilities.			
In the last column, place a check mark next to any item occur Stormwater or wastewater effluent (including failing septic syste	ing in either the wetland or its CA that is likely to have accelerated to		[R]	
Stormwater or wastewater effluent (including failing septic system Metals & chemical wastes from mining, shooting ranges, snow	ing in either the wetland or its CA that is likely to have accelerated tiems), landfills, industrial facilities.		[R]	
In the last column, place a check mark next to any item occun Stormwater or wastewater effluent (including failing septic syste Metals & chemical wastes from mining, shooting ranges, snow npri/default.asp?lang-En&n=B85A1846-1	ing in either the wetland or its CA that is likely to have accelerated to ems), landfills, industrial facilities. storage areas, oil/ gas extraction, other sources (download many loca		[R]	
In the last column, place a check mark next to any item – occur Stormwater or wastewater effluent (including failing septic system Metals & chemical wastes from mining, shooting ranges, snow npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsid: If any items were checked above, then for each row of the table	ing in either the wetland or its CA that is likely to have accelerated to ems), landfills, industrial facilities. storage areas, oil/ gas extraction, other sources (download many loca ess, or other areas in the CA. below, assign points. However, if you believe the checked items did no	iions from National Pollutant Release Inventory and view KMZ over	rlay in Google Earth. https://www.ec.gc.ca/inrp-	
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In the last column, place a check mark next to any item occur Stormwater or wastewater effluent (including failing septic system of the sys	ing in either the wetland or its CA that is likely to have accelerated to ems), landfills, industrial facilities. storage areas, oil/ gas extraction, other sources (download many local ess, or other areas in the CA. below, assign points. However, if you believe the checked items did in with the condition if the checked items never occurred or were no lor Severe (3 points)	iions from National Pollutant Release Inventory and view KMZ over	rlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the Mild (1 point)	
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FieldS form Non-tidal 1

Excessive Sediment Loading from Contri	buting Area			
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			1
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				1
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			1
Accelerated channel downcutting or headcutting of tributaries du	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	2
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	1
" high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum= Stressor subscore=	4 0.33
Soil or Sediment Alteration Within the Ass	sessment Area			
In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	n the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pas	st 100 years or since wetland was created or restored (whichever	
Compaction from machinery, off-road vehicles, livestock, or mou	untain bikes, especially during wetter periods.			
Leveling or other grading not to the natural contour.				
Tillage, plowing (but excluding disking for enhancement of native	e plants).			
Fill or riprap, excluding small amounts of upland soils containing	organic amendments (compost, etc.) or small amounts of topsoil im	ported from another wetland.		
Excavation.				
Ditch cleaning or dredging in or adjacent to the wetland.				
Boat traffic in or adjacent to the wetland and sufficient to cause	shore erosion or stir bottom sediments.			
Artificial water level or flow manipulations sufficient to cause ero	sion or stir bottom sediments.			
If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the che	below, assign points. However, if you believe the checked items did r ocked items never occurred or were no longer present.	not measurably alter the soil structure and/or topography, then lea	ve the "O's" for the scores in the following rows. To estimate	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of altered soil:	>95% of wetland or >95% of its upland edge (if any).	5-95% of wetland or 5-95% of its upland edge (if any).	<5% of wetland and <5% of its upland edge (if any).	0
Recentness of significant soil alteration in wetland:	Current & ongoing.	1-12 months ago.	>1 yr ago.	0
Duration:	Long-lasting, minimal veg recovery.	Long-lasting but mostly revegetated.	Short-term, revegetated, not intense.	0
Timing of soil alteration:	Frequent and year-round.	Frequent but mostly seasonal.	Mainly during one-time or scattered events.	0
			Sum=	0
			ou	

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-Trib1-W-02

Date: 11 September 2019 Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.178466, 66.210666

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.67	Moderate	0.37	Lower	5.32	0.45
Stream Flow Support (SFS)	1.88	Lower	3.48	Moderate	1.00	2.03
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.73	Lower	8.33	0.44
Phosphorus Retention (PR)	4.37	Higher	0.00	Lower	6.00	0.33
Nitrate Removal & Retention (NR)	2.84	Moderate	7.19	Moderate	5.58	7.50
Carbon Sequestration (CS)	8.22	Higher			8.11	
Organic Nutrient Export (OE)	5.14	Moderate			5.06	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	8.21	Higher	0.76	Lower	6.76	1.66
Amphibian & Turtle Habitat (AM)	2.70	Lower	2.16	Lower	4.72	3.40
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.29	Moderate	5.00	Moderate	5.21	5.00
Pollinator Habitat (POL)	7.50	Moderate	0.00	Lower	6.04	0.00
Native Plant Habitat (PH)	5.71	Moderate	4.32	Moderate	5.39	3.75
Public Use & Recognition (PU)			2.26	Lower		1.94
Wetland Sensitivity (Sens)			1.51	Lower		2.66
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			0.45	Lower		2.42
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.88	Lower	0.37	Lower	5.32	0.45
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.24	Higher	4.91	Moderate	7.67	5.13
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.01	Moderate	2.45	Moderate	4.98	1.63
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.62	Lower	1.30	Lower	2.83	2.04
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.00	Moderate	4.05	Moderate	5.79	3.96
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			0.98	Lower		2.54
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	he wetland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - BB-Trib5-W-02
Investigator Name:	Matt Alexander
Date of Field Assessment:	17 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.174268
Longitude (decimal degrees):	66.206582
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.71
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	75
What percent (approx.) of the wetland were you able to visit?	75
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	Catches runoff from Burchill Road.

Investigator: Matt Alexander

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-appsyapps-rc.aspy
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,
STR= Stressors.

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	- 1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within twis:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include on the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		< 0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	1	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	1
		>100 hectares.	0	1
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	< 0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		<50 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	1 s.]	
		< 50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain > 375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	i
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
-6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation"]	3	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AAI's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
		[* NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	["NOIL: woody cover = frees & strubs lailer than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are		
8		Draw a 5-km addius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, is:		
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations is: -5% of the land.	0	
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 55% of the land. 5 to 20% of the land.	0	
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land.	0 0	In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 50 to 60% of the land. 20 to 60% of the land. 60 to 90% of the land.	0 0	
	Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations; s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
	Percentage Type of Land Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. 50% of the land SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
9	Percentage Type of Land Cover Alteration	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -6% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
79	Percentage Type of Land Cover Alteration Distance by Road to	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. 50% of the land SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p
79	Percentage Type of Land Cover Alteration	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -6% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
79	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, 5-5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 20% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is:	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route. Settlements (click on Place Names) in menu) or other areas not close to mapped settlements but
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m. 100 - 500 m. 0.5-1 km.	0 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tooto- Freehand Line to draw and measure the route.
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 500% of the land. 50% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landsilde, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m. 100 - 500 m.	0 0 0 0 1 1	of an appropriate land cover layer. (AM, PH, POL, SBM, Sens) [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route. Settlements (click on Place Names) in menu) or other areas not close to mapped settlements but

OF11	F11 Distance to Nearest From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:			Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	- 1	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m. >500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an
01.12	Trialio / tooss	separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13		The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		in Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14		The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m. 100 m - 1 km.	0	
		1 - 2 km.	0	
		2-5 km.	1	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km.	0	
OF16	Upland Edge Contact	Select one:	0	[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	,,
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non-			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases evees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	modeling. [WSv]
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges.	0	
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	-	[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.16	
DF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		Walters. Data are insufficient (no or inadequate campling within 1 km, or condition exists only at > 1 km unchroam/This is the cituation for nearly.	1	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.		
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	1	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised	0	
OF23	Unvegetated Surface in	In the proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots.		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	*
		10 to 25%.	0	
		>25%.	0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present, (b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	1	
		Mostly untrue.	0	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	0	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	- 1	
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	- 1	
		1- 2 km.	0	
OFCE		>2 km, or wetland lacks an inlet and outlet.	0	
	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
UF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites: http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	l	aters.html
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon realing and/or spawning, but is connected to hearby waters likely to contain Atlantic salmon or other anadromous species or eels and is probably accessed by those during some conditions.	U	
		Is probably is not accessed by any anadromous fish species but is known or likely to haveother fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv, WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a mapped Atlantic Coastal Plain Flora Buffer	0	WDIWJ
		:	0	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nestingsongbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee of the accompanying Supplnfo file, during their nesting season (May-July for most species).	0	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, calledBAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq, km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 00-20 (enter 2), 0	0	This was provided by Dr. David Leske. [WBNv]
0500		>30 (enter 3). If outside of region shown in map, change toblank.		lond.
UF32	Wintering Deer or Moose Concentration Areas	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	0	[SBM]
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, FIrst Nations, or the Nature Conservancy of	l	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
JI 34	Conscivation investinent	enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change to the information change to the information of the information of the information change to the information of the	U	ir ol
		0).	L_	
OF35	Mitigation Investment	The AA is all or part of a miligation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank.	0	[PU]
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change tdblank.		
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tablank.	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere conditions.		
		Conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Da	ite: 17 Sept 2019	Site Identifier: BB-Trib5-W-02	Investigator:	: Matt Alexand	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

ш	to die	Condition of t	<u> </u>	Definitions In 1 11
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
IA sh ncludi adja lescri	ould also include part of it the open water part adj cent " is used synonymou bed features along their it	The AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should lacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this dat form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2	Mandallaicht & Farm	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Woody Height & Form Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegelated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Decladous stricts in this region losality include distinctions, Labriator lea, varyerity (worker), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the threes/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	3	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
lote :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	0	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie: [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	0	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM, INV, NR, PH, SBM, Sens]
6	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each		p , ,
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		A1. The two height classes are mostly scattered and intermixed throughout the AA.	1	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.		
7	Large Snags (Dead	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
7	Large Snags (Dead Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	
7	Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 0 0	at least 2 m tall. [POL, SBM, WBN]
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tail. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
, ,	IN FIXEIS	is:		DO TOCHICLAGE IN TAKING LIGHT SET OF THE PROPERTY OF THE PROPE
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruls, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	
F13	Upland Inclusions	Several (extensive micro-lopography). Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	Opiana inclusions	Few or none.	1	•
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	0	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m. 100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
		<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
E10	Sodge Cover	>95% of the herbaceous part of the AA.	0	[CC]
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	
		5-50% of the vegetated area. 50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	1
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
		aquatic plants). Then choose one of the following:		
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F22			Ů	IFC DI DOI Com
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 3-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	1
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.	<u> </u>	
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23		a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:	1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]	
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	pairispecies. In review in Systems, the extent of his zone can be estimated by moliphying by 2 his bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, DE, PH, SR, WBF, WBN, WS]
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		if several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0]
E0.4	0.1	>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	-
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
F40		Extensive.	0	Survey
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" dlich,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Medity passes through a pine subject passes where surface water exits the AA or connected waters nearby, the water:	^	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
		Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador teal) are prevalent. Enter *1*. Neither of above. Enter *1*.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Condition	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µSicm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	0	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
NI-C C	and the second of	>10%.	0	SR, WBF, WBN, WS]
adjacei	nt. In many situations, th	ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images. Within a group outperdies 20 m biscraft from by AA's add a with upland and/or other worlands. The proceedings that contains percential.		IAM EA ED IMV NOV DU DOU DOV COM Come CO. CTD MAN
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	1

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in buller			, , , , , , , , , , , , , , , , , , , ,
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	0	
		>30%.	0	-
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
	·	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	1	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
EO	Micibility	Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or	1	IDLL CTD, WDF-J
58	Visibility	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	0	
		25-50%.	0	
59	Non concumptive	>50%.	1	[PU, STR]
39	Non-consumptive Uses - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[ru, 51k]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Nole: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	1	
		>95% of the AA with or without inhabited building nearby.	0	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	
		Fishing.	0	
		Trapping of furbearers.	0	
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0]
		100-500 m. away.	0	
		>500 m. away, or no information. The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	1	(9), 69)
66	Calcareous Fen		0	[PH, PR]

FieldF form - Non-tidal Page 5 of 5

igator: Matt Alexander	Site Identifier: BB-Trib5-W-02	D.	ate: 17 September 2019
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2	
Aberrant Timing of Water Inputs	Wetterland. Weer Ad for New B	Turiowick: Voloion 2.	
•	the standard of the standard o		
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time:
Stormwater from impervious surfaces that drains directly to the wetla	and.		
Water subsidies from wastewater effluent, septic system leakage, sn	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other con-	sumptive use.		
Flow regulation in tributaries or water level regulation in adjoining wa	ter body, or other control structure at water entry points that regu	ulates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from the	he wetland that interferes with surface or subsurface flow in/ou	ut of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of m	nachinery, livestock, fire, drainage, or off road vehicles.		
Straightening, ditching, dredging, and/or lining of tributary channels.			
If any items were checked above, then for each row of the table below To estimate effects, contrast the current condition with the condition if		no measurable effect on the timing of water conditions in any part of	the AA, then leave the "U's" for the scores in the following rov
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within past	10 years, and only for the part of the wetland that experiences the	, ,	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
Accelerated Inputs of Contaminants and/or S In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storay	either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				1
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum te effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* black interests - outcomes off annul continuous almost annulus	excavation, erosion with or without year removal: low-intensity- year	removal only with little or no apparent erosion or disturbance of	6	
nign-intensity= extensive oil-road vehicle use, plowing, grading, soil or sediment.	excavation, crosion with or without veg removal, low intensity- veg	removal only with time of the apparent election of also also before	Sum=	
		to to the control of the apparent of the control of	Stressor subscore=	0.42
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-Trib5-W-02

Date: 17 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.174268, 66.206582

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.13	Moderate	1.58	Lower	4.90	1.65
Stream Flow Support (SFS)	2.66	Lower	2.97	Moderate	1.42	1.73
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	5.94	Higher	2.06	Lower	7.22	1.25
Phosphorus Retention (PR)	4.51	Higher	4.55	Moderate	6.10	4.44
Nitrate Removal & Retention (NR)	1.74	Lower	5.50	Moderate	4.90	6.00
Carbon Sequestration (CS)	6.49	Higher			7.36	
Organic Nutrient Export (OE)	3.70	Moderate			4.30	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.90	Moderate	0.60	Lower	5.60	1.57
Amphibian & Turtle Habitat (AM)	2.17	Lower	4.78	Moderate	4.44	4.99
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.00	Moderate	10.00	Higher	4.97	10.00
Pollinator Habitat (POL)	8.84	Higher	10.00	Higher	7.12	10.00
Native Plant Habitat (PH)	4.72	Moderate	8.49	Higher	4.99	7.36
Public Use & Recognition (PU)			2.19	Lower		1.89
Wetland Sensitivity (Sens)			1.53	Lower		2.66
Wetland Ecological Condition (EC)			3.49	Moderate		6.25
Wetland Stressors (STR) (higher score means more stress)			7.58	Higher		5.05
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.66	Moderate	1.58	Lower	4.90	1.65
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	5.00	Moderate	4.77	Moderate	6.88	4.95
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	3.85	Moderate	2.08	Moderate	4.21	1.42
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.30	Lower	2.87	Lower	2.67	2.99
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.68	Higher	9.75	Higher	6.41	9.56
WETLAND CONDITION (EC)			3.49	Moderate		6.25
WETLAND RISK (average of Sensitivity & Stressors)			4.56	Higher		3.85
	DIOTE A				1 16 1	

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
09.41	
	Burchill Wind Energy Project - BB-Trib7-W-01
Investigator Name:	Matt Alexander
Date of Field Assessment:	12 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.182871
Longitude (decimal degrees):	66.207452
Is a map based on a formal on-site wetland delineation available?	
Approximate size of the Assessment Area (AA, in hectares):	0.31
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	15
	Catches runoff from pit/quarry. Flow to the wetland is flashy as observed during a precipitation event.

vestigator: Matt Alexander

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
DF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	4
)F3	Ponded Water &	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
,, ,	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare. 0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	1	
		>100 hoctares.	0	1
)F4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,	T	See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:	^	Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens
		<0.01 hectare (about 10 m x 10 m).	0	4
		0.01 - 0.1 hectare. 0.1 - 1 hectare.	0	1
		to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
DF5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		<50 m, and not separated from the 375-ha vegetated area by any width obaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped to the contains of the con	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "I'. "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"].	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by Meximideral imagery in Google Earth affer successively drawing or estimating the boundaries of the buffer of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMV, PHPOLV, SBMV, WBFV, WBNV]
)F7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.]	0	See above. Do not consider conlifer plantations to be forest if it is obvious that trees were planted in rows. [AMV, PHV, POLV, SBMV]
)F8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	1
		5 to 20% of the land.	0	
		20 to 60% of the land.	0]
		60 to 90% of the land.	0	
		>90% of the land. SKIP to OF10.	1	
DF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
				"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		
	Nearest Population		0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
		Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m. 100 - 500 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
	Nearest Population	<100 m.		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Nearest Population	<100 m. 100 - 500 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. C
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	- 1	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	-
		>500 m.	0	-
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands ar roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01.10	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wet [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	1
		0.5 - 1 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	1
		1 -2 km.	1	
		2-5 km.	0	
		5-10 km.	0	-
OF15	Tidal Proximity	>10 km. The distance from the AA edge to the closestidal water body (regardless of its salinity) is:	0	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve
		** Color m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m - 1 km.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
		10-40 km.	0	
OF16	Upland Edge Contact	>40 km. Select one:	0	[NR, SBM, Sens]
01.10	opiala Eago ooniaa	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	, (San, San)
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the men
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling, [WSV]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases tevees, upriver dams, or other meastures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		wags ou not show Flood zone or Flood Risk areas prino such mapping has been done rocally) and there appears to be initiastructure vulnerable to the flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AXS approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's	0.10	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.18	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Watershed or Area Degraded Water	Enter 1= yes, 0- no. Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA.	0	be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	1
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Consoling duties both to under a printed and times with high purel' (degree, populated to a probleme in all the AA or influsion.)	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
050-	Markey or an	all wetlands in this region.		Township was a substitute of the substitute of t
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AM may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding, and/or t using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	V	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	-
		0.1 to 1.	1	1
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise	0]
		bog). Unvegetated Surface in The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots the Contributing Area of the pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		
OF23		The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
OF23		The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot:	0	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(a) land cover is mostly non-iorest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		This section is.		
		Mostly true.	0	
		Somewhat true.	1	
		Mostly untrue.	0	
0.505		-	0	TAMAND OF A MOUNT OF THE STATE
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OE26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:	ů	Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
01 20	(Path Length)	The nonzoniar now distance from the welland 3 filler to oditer is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(i dai congai)	<10 m.	0	and miles are datices, and dagment by mad inspection. [111, 62, 111, 61, 115]
		10 - 50 m.	0	
		50 - 100 m.	1	
		100 - 1000 m.	0	
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
0527	Crowing Dogger - Dev		U	This layer was provided by Dr. Don McKonney of the Constitution of
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
		1.1.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	ľ	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		aters.html [AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	pan, m, m, m, mon, mon
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	v	
		Is probably is not accessed by any anadromous fish species but is known or likely to have ther fish at least seasonally.	0	1
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
0500				D 116 # 6 400D0 # 11
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv, WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WDINVJ
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	black back Nesting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		This was provided by Dr. David Ecske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				(ana)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
			L	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are		
		agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change the lank (not		
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
OE27	Calcaroous Posion	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	_	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		mater to the control (p. 1. to account years of a paper train of the Manual. It has map coverage, change wealth.		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere		
		conditions.	L	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 12 Sept 2019	Site Identifier: BB-Trib7-W-01	Investigator:	Matt Alexand

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearty so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja descn	ould also include part of a le the open water part adj cent " is used synonymo libed features along their a	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout this form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form Diversity	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the
		coniferous trees (may include tamarack) taller than 3 m.	2	trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees taller than 3 m. coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	3	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
<u>Vote</u> :	If none of top 4 rows in Dominance of Most	F3 was marked 2 or greater , SKIP to F9 (N fixers). Determine which two woody plant species comprise the greatest portion of the low (-3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
4	Abundant Shrub	those species together comprise > 50% of such cover.	1	[FR, FUL, SDW, Sells]
	Species	those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge perimeter). The edge should include only the trees whose canopies extend into the AA. conferous, 1-9 cm diameter and >1 m tall.	1	Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be welland species
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	0	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	0	
		broad-leaved deciduous >40 cm diameter.	0	
6	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	1	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Eilher the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at
	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	at least 2 m tall. [POL, SBM, WBN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
8	Downed Wood	Several (>8/hectare) but above not true. The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is:	1	Exclude temporary "burn piles." [AM, INV, POL, SBM]
		Few or none that meet these criteria.	0	

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FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INFINITY BIGGE OF INCIDENS. [F.A., F.K., INVV, INVV, OL., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
			0	
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered). Intermediate.	1	
		Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	U	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger.	0	
		Deep Peat, to 40 cm depth or greater. Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	rogolatoa vvoltaria	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA. >95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	Ü	[CS]
	J	<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one or the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file. invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species appear to be absent in the AA, or are present only in trace amount (a rew individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover. (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant	U	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
. 21	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	1	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	1	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	
		0.5 - 1 m change. 1-2 m change.	0	
		>2 m change.	0	
Is the /		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
	Class	AA, is: <10 cm deep (but >0).	0	safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	1	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	Proportions	One depth class that comprises 50-90% of the AA's inundated area.	1	
F04		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: -5% of the water, or it occupies -100 sg.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	1	Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water			
	that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open		0	[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0	[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0	[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
F34		and unhidden by a forest or shrub canopy) is: None, or ~1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 101% the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is:	0 0 0 0	
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, C.S, NR, OE, PH, PR,
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 1 - 9 m. 10 - 29 m.	0 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, C.S, NR, OE, PH, PR,
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or ~1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of me ponded water.	0 0 0 0 0 0 0 1	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, C.S, NR, OE, PH, PR,
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 1 - 9 m. 10 - 29 m.	0 0 0 0 0 0	"Vegelated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, (AM, CS, NR, OE, PH, PR,
F34	Width of Vegetated	and unhidden by a forest or shrub canopy) is: None, or 1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0 1 0 0	"Vegelated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, (AM, CS, NR, OE, PH, PR,
	Width of Vegetated Zone within Wetland	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 1 - 9 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. 50 100 m, or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 1 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Width of Vegetated Zone within Wetland	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 1 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Width of Vegetated Zone within Wetland	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 1 - 9 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. 50 100 m, or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 1 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Width of Vegetated Zone within Wetland	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. >100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 1 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Width of Vegetated Zone within Wetland	and unhidden by a forest or shrub canopy) is: None, or ~1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of ponded water. 100% of the water edge.	0 0 0 0 0 0 1 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Width of Vegetated Zone within Wetland Flat Shoreline Extent	and unhidden by a forest or shrub canopy) is: None, or ~1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 9 m. 30 - 49 m. 50 - 100 m. - 100 m. - 100 m. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less; than about 5% measured within 5 m landward of the water) is: < 1% of the water edge. 25-50% of the water edge. 25-50% of the water edge. 3-75% of the water edge. 1-1% percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:	0 0 0 0 0 0 0 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Width of Vegetated Zone within Wetland Flat Shoreline Extent	and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. 30-70% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: -1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 25-50% of the water edge. 5-57% of the water edge.	0 0 0 0 0 0 1 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose slems are partly above and partly below the water
F35	Width of Vegetated Zone within Wetland Flat Shoreline Extent	and unhidden by a forest or shrub canopy) is: None, or ~1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. 30-70% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 5-50% of the water edge. 7-5% of the water edge. 7-5% of the water edge. 1-5% of the emergent vegetation cover in the AA that is cattall (Typha spp.), common reed (Phragmiles), or tall (>1m) bulrush is:	0 0 0 0 0 0 1 0 0 0 0 0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	1	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
1 37	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Floating Algae & Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the welland, or the surface connection between the welland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.mcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	1	,,,,,
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	0	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[MCA]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	1	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador lea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	U	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	1	
		vegetated areas near surface water.		
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		r rore; or an area area minim ou in orine ray eage to other mentalities. OMF 10 1 33.	J	Į

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type of cover in buller			,,
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
	<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		-	
Cliffs or Steep Banks		1	Do not include upturned trees as potential den sites. [POL, SBM]
·	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	0	
	- '	0	
Down I Hotom		1	Look for charred coil or ctumps (in multiple widely appead locations) or ack landowner (CS DIL STD)
burn HISIOTY	1 1 2		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		0	-
			-
	, ,	0	
Vicibility		1	[PU, STR, WBFv]
VISIDIIIIY	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:	•	[PU, STR, WBPV]
			4
		1	
Non consumptive		1	[PU, STR]
			[F0, 51K]
Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
	Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	0	
	Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Nole: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
	<5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	1
	5-50% and no inhabited building is within 100 m of the AA.	0	1
	5-50% and inhabited building is within 100 m of the AA.	0	
	50-95%, with or without inhabited building nearby.	1	
	>95% of the AA with or without inhabited building nearby.	0	
Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		0	
			Total and
	soil within nearly all of the AA when the soil is unfrozen. Enter *1* if true.		[PH, PU]
BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter '11' if true.	0	[AM, PU, WBF, WBN]
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0]
	Fishing.	0	
	Trapping of furbearers.	0	
	None of the above.	1	na i
Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
	Within 0-100 m. of the AA.	0	
	100-500 m. away.	0	
	>500 m. away, or no information.	1	
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Visibility Unvisited Core Area Unvisited Core Area Frequently Visited Area BMP - Solis BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	reportions surface, e.g., pased road, parking kt, building, exposed rock. Barr or many lives pervious surface or managed vegetables, e.g., lives, row or ops, unproved road, disk, landside. Buildie Slages Pro Seleppe and work out distanced park of the year and a within 30 m of the welland and couples >10% of that upland area has a percent slage of the Seleppe and work of Seleppe and work out of the Seleppe and work out of Seleppe 30%. 52	mpervious surface, e.g., pased mad. parting NK. building exposed rock. Box or many by the privious surface or managed exposition or, cities, core rough, copy or privious surface or managed exposition or, cities core, in the second and acceptes - 170% of this updated area has be an interprivious or the weedinard and ecocytes - 170% of this updated area has a serior of the weedinard and ecocytes - 170% of this updated area has a serior of the weedinard and ecocytes - 170% of this updated area has a serior of the weedinard and ecocytes - 170% of this updated area has a serior of the weedinard and ecocytes - 170% of this updated area has a serior of the weedinard and ecocytes - 170% of this updated area has a serior of the

FieldF form - Non-tidal Page 5 of 5

gator: Matt Alexander	Site Identifier: BB-Trib7-W-01		Date: 12 September 2019	
essor (S) Data Form for Non-Ti	dal Wetlands. WESP-AC for New B	runswick. Version 2.		Dat
Aberrant Timing of Water Inputs				Dat
<u> </u>	likely to have caused the timing of water inputs (but not necessarily their	ryaluma) ta chift by bours, days, or wooks, becoming either mare	mutad (cmaller or loce frequent peaks enread over langer time	
	ashy (larger or more frequent spikes but over shorter times). [FA, FR, IN]		muteu (smailer of less frequent peaks spread over longer lime.	
Stormwater from impervious surfaces that drains directly to the	ne wetland.			1
Water subsidies from wastewater effluent, septic system leak	age, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or ot	her consumptive use.			
	ning water body, or other control structure at water entry points that regu			
·	at from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, de	aad-end diich.			
Artificial drains or ditches in or near the wetland.	internal channel (incised below the historical water table level).			
Logging within the wetland.	memai chamiei (inciseu below the historical water table level).			
	sult of machinery, livestock, fire, drainage, or off road vehicles.			
Straightening, ditching, dredging, and/or lining of tributary cha				
If any items were checked above, then for each row of the tab	le below, assign points. However, if you believe the checked items had n	o measurable effect on the timing of water conditions in any part o	of the AA, then leave the "O's" for the scores in the following row	S.
To estimate effects, contrast the current condition with the con	dition if the checked items never occurred or were no longer present. Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	Mild (1 point) <5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
ů ů	nin past 10 years, and only for the part of the wetland that experiences th	, ,	J.5 696.	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
	·	·	Sum=	
			Stressor subscore=	0.
Accelerated Inputs of Contaminants and	d/or Salts		Stressor subscore=	0.
Accelerated Inputs of Contaminants and		ne innute of contaminants or salls to the AA IAM FA PH POLS		0.
In the last column, place a check mark next to any item occ	urring in either the wetland or its CA that is likely to have accelerated th	ne inputs of contaminants or salts to the AA. [AM, FA, PH, POL, ST		
In the last column, place a check mark next to any item occu Stormwater or wastewater effluent (including failing septic sy	urring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities.		TR)	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			1
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				1
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			1
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	3
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* high-intensity= extensive off-road vehicle use, plowing, grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	9
soil or sediment.		, , , , , , , , , , , , , , , , , , , ,	Julii-	
	sessment Area		Stressor subscore=	0.75
soil or Sediment Alteration Within the Ass	the wetland that is likely to have compacted, eroded, or otherwise a		Stressor subscore=	
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-Trib7-W-01

Date: 12 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.182871, 66.207452

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

compated.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.25	Lower	4.15	Moderate	3.46	4.20
Stream Flow Support (SFS)	4.06	Moderate	3.10	Moderate	2.17	1.80
Water Cooling (WC)	4.85	Moderate	6.11	Higher	3.23	3.67
Sediment Retention & Stabilisation (SR)	4.03	Moderate	3.22	Lower	5.92	1.95
Phosphorus Retention (PR)	3.30	Moderate	8.23	Higher	5.24	7.78
Nitrate Removal & Retention (NR)	3.13	Moderate	7.50	Higher	5.76	7.78
Carbon Sequestration (CS)	4.49	Moderate			6.50	
Organic Nutrient Export (OE)	5.45	Higher			5.23	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.42	Moderate	3.88	Moderate	5.43	3.34
Amphibian & Turtle Habitat (AM)	5.29	Moderate	4.55	Moderate	6.09	4.85
Waterbird Feeding Habitat (WBF)	5.36	Moderate	4.17	Moderate	4.27	4.17
Waterbird Nesting Habitat (WBN)	2.20	Moderate	2.50	Moderate	1.88	2.50
Songbird, Raptor, & Mammal Habitat (SBM)	9.39	Higher	2.50	Lower	7.78	2.50
Pollinator Habitat (POL)	8.70	Higher	0.00	Lower	7.01	0.00
Native Plant Habitat (PH)	4.82	Moderate	5.68	Moderate	5.03	4.93
Public Use & Recognition (PU)			2.08	Lower		1.81
Wetland Sensitivity (Sens)			5.78	Higher		3.94
Wetland Ecological Condition (EC)			3.49	Moderate		6.25
Wetland Stressors (STR) (higher score means more stress)			10.00	Higher		6.56
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	4.06	Moderate	4.15	Moderate	3.46	4.20
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.76	Moderate	7.27	Moderate	6.18	6.81
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	5.08	Moderate	5.24	Higher	4.72	3.31
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	3.97	Moderate	3.39	Moderate	4.27	3.58
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.51	Higher	4.20	Moderate	7.20	3.70
WETLAND CONDITION (EC)			3.49	Moderate		6.25
WETLAND RISK (average of Sensitivity & Stressors)			7.89	Higher		5.25
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	ne wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name	Burchill Wind Energy Project - BB-W-02
Investigator Name	Derrick Mitchell
Date of Field Assessment	14 October 2019
Nearest Town	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees)	45.193464
Longitude (decimal degrees)	-66.201101
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares)	1.2
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland	80
What percent (approx.) of the wetland were you able to visit?	80
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired)	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

The State State The S	#	Indicators	Condition Choices	Data	Definitions/Explanations
And the desiration of the control of	F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
Here Solds Assert Manual Part Solds Assert Man			New Brunswick	1	
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The control of the			Prince Edward Island	0	
Office and process of the common of the comm			Newfoundland-Labrador	0	
List of a treatment of the company o	2		The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
Edit Call Sections Edit 1 - The closes Edit 2 - The closes Edit 1 - The closes Edit 2 - The closes and closes			<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
11-1 Thorons 12-1 Thorons 13-1				0	
The Shederise Service of Differences				0	
The state of weather and surface and produced during most of the gening socion that is both (1) in or algored to the AM and C2 with a state of the s			1 to 10 hectares.	0	
Note of Waller 1 in 1 i			10 to 100 hectares.	0	
Section William Section Sectio			>100 hectares.	1	
1911 - 1 Federice 1 to Noncience 1 t	3			ì	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
1.1. Petrolises 10 to 10 blocketes 10 blocke			<0.01 hectare (about 10 m x 10 m).	0	
11. 1 February The Directories The Dir			· · · · · · · · · · · · · · · · · · ·	0	1
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States to Large The blackers 1 - Includes 2 - Includes 3 - Includes			>100 hectares.	1	
Supplied Text The Complete Special of the Complete Special of the Complete Special Sp	1		The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sr
201 - 1 hotelans. 1 to 10 hotelans. 1 to 25 hotelans. 1 to 10 hote		Corridor	< 0.01 hectare (about 10 m x 10 m).	0	
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The minimum distance from theodogr of the AR in the edge of the closest segentated four Quid excluding row crops, lawn, comfort plantation lawn part and 5 hockares (block). In on a solid), is considered for the closest segentated from the 375 has vegetated from th				0	
So m, and not separated from the 375-ha vegetation (and such sections of age to a section of completely separated from the 275-ha vegetation (This is often the answer in relatively undeveloped landscape as on a section of the secti	5	Distance to Large			To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
wom, or improvious surface. Or the AN best contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.] -50 m. but completely separated from the 375 ha wegetated area by those features, and AA does not contain >375 ha of vegetation. -50 5.5 m. but completely separated from the 375 ha wegetated area by those features50 5.5 m. and not separated50 5.5 m.		Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated m, and an experiment with the part of the separated. 9-500 m, and not separated m, and an experiment with the separated by the section by the separated by the section by th				1 s.]	
South Separated by those features 15.5 km, and not separated 15.5 km			<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
Distance by Road of Ward Cover Percentage Local Vegetated Cover Percentage Type of Land Cover Min the SA's wegetation for the content part of the Local Standard Cover Percentage Local Vegetation Cover is 5-10% woody but uplands within 15 km have <10% woody cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous but uplands within 16 km have <10% herbaceous cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous will as grassifile plants in this use of herbaceous wegetation. Prover is 5-10% herbaceous will uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1" in Notice to was a structure of the AA's vegetation cover is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider. The AA's vegetation is 5-10% woody but uplands within 100 m of the we			50-500 m, and not separated.	0	1
S - S km, but separated by those features 0			50-500 m, but separated by those features.	0	1
Need of the above (the closest patches or confidors which are that large are 5 km away). Hetbaceous Uniqueness The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '3' and continue to O'. If not, consider. The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% hetbaceous's but uplands within 10m of the wetland edge have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% herbaceous's but uplands within 10m of the wetland edge have <10% herbacous vegetation. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland ed			0.5 - 5 km, and not separated.	0	
Hetbaceaus Uriqueness The Af S vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so, enter "3" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 10 m of the wetland edge have < 10% herbaceous cover. If so, enter "2" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands. Include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation is > 10% woody' but uplands within 5 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" 1" NOTE: woody cover = trees a shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Local Vegetated Cover Percentage of the Af S to 20% of the land. 5 to 30% of the land. 5 to 3			0.5 - 5 km, but separated by those features.	0	
OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover. If see a shrubs taller than 1 m.] In Coole Vegetatied Cover Percentage The AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is >			None of the above (the closest patches or corridors which are that large are >5 km away).	0	
consider: The AN's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AN's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrush staller than 1 m.] Local Vegetated Cover Percentage Percentage Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land50 to 50% of the land50 to 50% of the land50 to 90% of the land50 within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Mithin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: 100 m50 to 500 m50 to	6	Herbaceous Uniqueness	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, I
The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Torau a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 10 cools of the land. 20 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 30 of 10 e90% of the land. 30 of 10 e90% of the land. 30 of the land. 40 of 10 e90% of the land. 40 of 10 e9	7	Woody Uniqueness		0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Percentage Percentage Percentage Procentage Percentage Procentage P			The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 00 to 90% of the land. 00 to 90% of the land. 00 ver Alteration Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. 10 Stance by Road to Nearest Population Center Cen			The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
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5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. SKIP to OF10. Type of Land Cover Alteration The provious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center 100 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 1-5 km. 1-5 km. 100 m. 1-5 km.			S:		
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- 590% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 - 500 m. 0.5 1 km. 1 - 5 km. 1 - 5 km.					
Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center On the content of the c				0	
Alteration Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Nearrest Population Center Center 100 m. 100 - 500 m. 0.5 + 1 km. 1 - 5 km.				1	
Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (c5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Distance by Road to Nearest Population Center 100 m.	9		Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center Population cen		Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, the Hall, and daw and measure tender in 100 - 500 m. Output Output Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited square kilometer. In Coogle				0	1
Nearest Population Center 100 m. square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure rore from the control of the co	10	Distance by Road to			"Population center" means a settled area with more than about 5 regularly-inhabited structures r
Centler 100 m. 0 route. Or use the GeoNB's Draw & Measure loot Freehand Line to draw and measure the route 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlements of the meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1 - 5 km. 1			· · · · · · · · · · · · · · · · · · ·		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
0.5-1 km. 0 which meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1-5 km. 1					route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
1 - 5 km.					Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
				0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
⊳5 km. 0				1	
			>5 km.	0	

OF44	Distance to Nearest From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing acrist images, in Coople Earth and measuring with the Pules Line teel.		
UF11	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]	
		<10 m.	0		
		10 - 25 m. 25 - 50 m.	0	1	
		50 - 100 m.	0		
		100 - 500 m.	1		
OF12	Wildlife Access	>500 m. Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an	
UF12	vviidille Access	unaw a circle of radius of s km from the center of the Avi. in maintains and ampinicans call move from the center of the Avi. of ALL other separate wellands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wellands within 5 km.	0	If the, enable the wellands layer in Gebrus (despite its offissions) to show surrounding wellands and roads, while estimating the location of the 5 km cicle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]	
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well	
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]	
		<50 m, but completely separated by those features.	0		
		50-500 m, and not separated.	1		
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0		
		0.5 - 1 km, but separated by those features.	0		
		None of the above (the closest patches or corridors that large are >1 km away).	0		
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]	
		<100 m.	0		
		100 m - 1 km.	1		
		1 -2 km. 2-5 km.	0		
		5-10 km.	0	1	
		>10 km.	0		
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this	
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local	
		100 m - 1 km. 1 - 5 km.	0	information if available may be preferable. [FA, WBF]	
		1 - 5 km. 5-10 km.	0		
		10-40 km.	0		
		>40 km.	0		
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]	
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0		
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0		
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0		
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0		
		will be true for most assessments done with WESP-AC.	'		
OF17	Flood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu	
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (WSv)	
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases	0	modeling. [WSV]	
		levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure underable to river flooding unrelated to tidal storm surges.	0		
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1		
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (jower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.24	[FA, NR, Sens, SFSv, WCv, WSv]	
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]	
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. JAM, FA, FR, NRV,	
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]	
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0		
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0		
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1		
OF21	Degraded Water	all wetlands in this region. The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]	
	Downstream		1	g and, a manufacture per stress resident assessment. [rece, 1 (v) 5(v)]	
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0		
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0		
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0		
OF22	Wetland as a % of Its	all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which		Topographic maps may be viewed online at the National Atlas of Canada (Toporama):	
	Contributing Area (Catchment)	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]	
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0		
		0.1 to 1.	1	1	
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised boq).	0		
OF23	Unvegetated Surface in the Contributing Area	usus. The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]	
	and Continualing Ared	<10%.	1		
		10 to 25%.	0		
		>25%.	0		

Comparison of the present	OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
So you also has been engined. The source of the second of			indicated by the following: (a) input channel is present		
Section of the control of the cont			(b) input channels have been straightened,		
1					
Bind CAS be available ploated, test and racing what the high and contributes 1					
Rely In the Comment of the Comment o			(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
Somewhat traits. Compared to the contraction of			This statement is:		
Second Proceedings of the control from securities which is a second process subsection of many subsections of many subsectio			Mostly true.	0	
See a control for deviction of most under some risk in season, seek or an experiment plant with the seek of the season of the se			Somewhat true.	0	
Section (No. 1997) And security of the section of t			Mostly untrue.	1	
Some Service	OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
The EST No. Will be proposed as a process of the company of the co				0	
Section of Concession Proceedings Proceedings Procession Pro			11. 7. 0. 0.	0	
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Section Description Section Communication Section Sect				0	
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Second and Proceedings of Secondary (1997) Seco	OF27	Growing Degree Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	
Property of page of control graphing control specified sequency of Adards among other productions of Specific Control (1997)	OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been chosen up NP, the list of sheeked waters in at
Append A of the Manual. Control call of the place special case in the "Inspiration combination combina				0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
Security of the contained and separated and separated processes and proceedings concentration to make years and proceedings of the contained Alland's plant species and proceedings of the contained and procedings of the contained and proc					aters.html
summor other anatomous openiors or do and is protechly and consecuted by manufactories of Sproached by the control				0	[AM, FA, FR, INV, WBF, WBN]
Species of Conservative Within the past 10 years, in the AR (or in 5 adjoining waters or welland), qualified discoveres have documented privated and applicable approached from the Concentration of				U	
Section of Conservation White the part of by years in the Adj or this adjoining waters or welfund), qualified decreases have documented and applicability Experience of one or more of the plant species listed in the Plants, Pare worksheet of the Prosecut of one or more of the interpolation or repulles species (MM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the melanguagesplant or repute species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the configuration of the recting secure (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the excent of the subject will be the concernance of the subject will be a concernance of the subject will be the concernance of the subject will be the process of the subject will be the process of the subject will be the s				0	
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Procedure of one of make of the parts species leaded in the Parts, Year worknessed of the Scorphaphy Supprison Be, of the As a within a supprison of the Suppri		Concern			
scoropanying Supplied (le. Presented for one more of the advantage) species (SME), WEW) of conservation concern as Island in the Wildlie, Bare worksheet of the Presented for one more of the internal present plant of the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the source of this layer, which should be checked periodically for updates, its May July of the accompanies the calculator, calcul				0	
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None of the above, or no data None of the above or n				0	
potente Bid Area BA Let T - yes, O - no. Sociogie Earth, open the KMZ file that accompanies this calculator, called Bax_Canada. The AA is all or part of an officially designated by the public of private BA Letter T - yes, O - no. BA Lett					
IN PACIFICATION OF THE CONSERVATION OF THE SAME (In that accompanies this calculator, called BioxDuck. Adjust is alignment and opacity. Determine the producted density (pairs per 25 sq. km) of nesting American Black Duck in the AAR's vicinity. 10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 30 (enter 3), 40 (0520	Innerted Bird Area		1	The second state is a second by the second by the second s
predicted density (pairs per 25 sq. lm) of nesting American Black Duck in the AAS vicinity; <10 (enter 0), 10-20 (enter 2), 203 (enter 2), 203 (enter 3). It outside or legion shown in may change toblank. OF32 Wintering Deer or Moose off AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that connected by Concentration Areas. Protected Secretary 1997. In the Conservation of Notice Conservation of Notice (Inc.) In the Conservation Investment of Notice (Inc.) In the Conservation Internation Internat	UF30			U	
Sal Center 3), if Outside of region shown in map, change loblank. SBM	OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
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Date: 14 October 2019 Site Identifier: BB-W-02 Investigator: Derrick Mitcl

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	T		1	
#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pilcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		They include include includent and in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, NV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically < 4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of le the open water part ad cent " is used synonymo ibed features along their	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) (hat are adjacent to the AA. The the water area of adjacent ponded water larger than 8 h and adjacent rivers wider than 20 m. Specifically, the AA should facent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
F2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
F3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%. coniferous trees (may include tamarack) taller than 3 m.	4	huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees (indy include faminalack) tailer trian 3 m.	3	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	0	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
Note :	If none of top 4 rows in	F3 was marked 2 or greater, SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	0	[PH, POL, SBM, Sens]
	Species	those species together do not comprise > 50% of such cover.	1	
F5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th
		coniferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	. , . , . , . , . , . ,
		comicrous, to 17 am diameter.		
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.		
		coniierous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1 1 1	
-6	Height Class	coniierous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	[AM, INV, NR, PH, SBM, Sens]
F6	Height Class Interspersion	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter.	1 1 1	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the A4: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly is resparate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1 1 1 1 0	
F6	Interspersion	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	1 1 1 1 0	
F6	Interspersion Large Snags (Dead	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8 / hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 1 1 1 0 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an
F6	Interspersion Large Snags (Dead Standing Trees)	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	1 1 1 1 0 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
F6 F7	Interspersion Large Snags (Dead	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8 / hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 1 1 1 0 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

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F10 Sphage		The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes) is: <1% or none. 1-25% of the vegetated cover, in the AA or along its water edge (whichever has more). 25-50% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
- P S.		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
- P S.			1	
- P S.			•	1
- P S.	L	50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
- P S.		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
Extent	agnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	nt	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
		Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
Thatch		predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (-5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA. Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12 Ground		Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0]
F12	ad lasts 1	Several (extensive micro-lopography).	0	TAM ND CDM
F13 Upland		Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14 Soil Te	Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
Jon 10	rexture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[65] 111, 111, 111, 111, 111, 111, 111, 11
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
	i	Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15 Shoreb	ebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
Habitat		unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		, , , , , , , , , , , , , , , , , ,
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
	ŀ	1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16 Herbac	aceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	U	[AM, WBF, WBN]
	hatad Watland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA.	0	
	!	50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17 Forb C	Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or others that take shortly notices. It only
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	1
		>95% of the herbaceous part of the AA.	0	1
F18 Sedge	ge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	1
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F10 Desc.	inonco of Mari	>95% of the vegetated area.	0	For this question include form or well or graminoids and factor IEC INIV DU DOL C.
		Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
Specie		those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	1
F20 Invasiv		How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
	į.	file.	1	
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	1
		woody).	"	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
E21		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	If a plant cannot be identified to species (e.g. winter conditions) but its account in a second in the second in t
		Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
Spiano		none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	1
		most (>50%) of the upland edge.	0	
F22 F	io Motland	During most of the year, anon-water within or adjacent to the yearstated and of the smallest in most of the state than the second of the second state of the second st		
F22 Fringe	ge Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	[WBF, WBN, WCv]
			0	[WBF, WBN, WCv] [FR, PR, PU, WBF, WBN]

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F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of		0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		
r 34		<1 m.	0	SBM, Sens, SR, WBN]
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the second of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 2.75% of the water edge. 2.75% of the water edge. 3.75% of the water	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 50-75% of the water edge. 50-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
		drain the wetland artificially, or water is pumped out of the AA.	U	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		bumps into trendaceous vegeration and mostly spreads intrognour, or is in watery meanitiening, multi-maticited, or braided chainnels.	U	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.]	_	
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1". Neither of above	0	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mild-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
Er.c	0 1 1 2	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly – do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during each writer. (AM, CS, EA, EP, INV, NP, OF, EM, EPP, VFS, WC, WS)
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		IAM FA FD INV ND, DIL DOL DD. CDM Core CD. CTD WDM
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
D # 01		0	(ND DD C CD)
Buller Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies > 10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
	<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
	2-5%.	1	
		0	
01.00			D. I.
Cliffs or Steep Banks	in the AA of within 100 m, there are elevated terrestrial reatures such as curts, fatus slopes, stream banks, or excavated pits (out not riprap) that extend a fleast 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	1	
			4
			1
		0	1
	Unknown if new or expanded within 20 years or not.	0	
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	
	Burned 6-10 years ago.	0	1
	Burned 11-30 years ago.	0	1
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
			-
Non-consumptive		Ů	[PU, STR]
Uses - Actual or		- 1	
Potential	water and dense shrub thickets.		
	contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	-
Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAV, FRV, PH, PU, SBM, STR, WBF, WBN]
	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.)		
	<5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	1
	5-50% and no inhabited building is within 100 m of the AA.	0	
	5-50% and inhabited building is within 100 m of the AA.	0	
		0	
F		1	IAM DIL DIL COM CTD WOF WON!
	The part of the AA visited by numans almost daily for several weeks during an average growing season probably comprises: \[\text{See note above.} \]		[AM, PH, PU, SBM, STR, WBF, WBN]
1100	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
	5-50%.	0	
	50-95%.	0	
	>95% of the AA.	0	
	soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.		[PH, PU]
BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
	Waterfowl hunting.	0]
	Fishing.	0	1
		0	
Domostic Wells		1	[NRv]
Domestic Wells			pusy
			1
		0	
	>500 m. away, or no information.	1	Thu and
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Univisited Core Area Frequently Visited Area BMP - Soils BMP - Wildlife Protection	Surfer Stope The stopes and many base provious surface or managed recipitation, cag, boars, one crops, enversed road, disc. landshills. The stopes and many base provious surface or managed recipitation, cag, boars, one crops, enversed road, disc. landshills. The stopes and many base provious surface or managed recipitation, cag, boars, one crops, enversed road, disc. landshills. 2-50. 2-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 3-50. 4	mperiosas surface, e.g., pased mast, parking IK, building, exposed rock. Bor or nonly here pervices surface or managed vegetations, e.g., laws, non crops, unproved road, dies, bandedade on a passion of the section and acceptes > 10% of that upland area has a surface. The steeped surface of durated part of the yeard area that is within 70 on of the welfand and acceptes > 10% of that upland area has a surface. 10

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igator: Derrick Mitchell	Site Identifier: BOR WL 6	U	ate: 14 October 2019
essor (S) Data Form for Non-Tidal	Wetlands, WESP-AC for New B	runswick. Version 2.	
Aberrant Timing of Water Inputs			
In the last column, place a check mark next to any item that is likely to	o have caused the timing of water inputs (but not necessarily the	ir valuma) to shift hy hours, days, or weaks, becoming either more n	mutad (smaller or loss fraquent neaks spread over langer times
more temporal homogeneity of flow or water levels) or more flashy (la			nuteu (smaller of less frequent peaks spread over longer times
Stormwater from impervious surfaces that drains directly to the wetla	and.		
Water subsidies from wastewater effluent, septic system leakage, sr	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other con	isumptive use.		
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	ulates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from t		it of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	i ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).		
Logging within the wetland.	machinery livesteely fire draining or off read vehicles		
Subsidence or compaction of the wetland's substrate as a result of n Straightening, ditching, dredging, and/or lining of tributary channels.	nacrimery, livestock, file, drainage, or on road vehicles.		
Straightening, ditching, dreuging, and/or inling of tributary channels. If any items were checked above, then for each row of the table below	w assign points. However if you halieve the checked items had i	no magazirable affect on the timing of water conditions in any nart of	f the AA, then leave the "O's" for the scores in the following row
To estimate effects, contrast the current condition with the condition in	in measurable eneed on the timing of water continuous in any part of	and the source of the sources in the following for	
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within past			
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
1			
Accelerated Inputs of Contaminants and/or \$ In the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining shooting rappase spows stora	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	,
In the last column, place a check mark next to any item occurring in	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	RJ
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FieldS form Non-tidal 1

	buting Area										
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]								
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.										
Erosion from construction, in-channel machinery in the CA.											
Erosion from off-road vehicles in the CA.											
Erosion from livestock or foot traffic in the CA.											
Stormwater or wastewater effluent.											
Sediment from road sanding, gravel mining, oil/ gas extraction. Accelerated channel downcutting or headcutting of tributaries due to altered land use. Other human-related disturbances within the CA.											
								elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
								Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.								
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.								
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.								
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.								
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0							
soil or sediment.											
	sessment Area		Stressor subscore=	0.00							
soil or Sediment Alteration Within the Ass	sessment Area the welland that is likely to have compacted, eroded, or otherwise a	illered the welland's soil. Consider only items occurring within pa	Stressor subscore=								
soil or Sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	the wetland that is likely to have compacted, eroded, or otherwise a	illered the wetland's soil. Consider only llems occurring within pa	Stressor subscore=								
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-W-02

Date: 14 October 2019 Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.193464, -66.201101

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computeu.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	6.11	Higher	0.52	Lower	6.43	0.60
Stream Flow Support (SFS)	2.40	Lower	3.74	Moderate	1.28	2.18
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	6.75	Higher	10.00	Higher	7.78	10.00
Phosphorus Retention (PR)	4.98	Higher	10.00	Higher	6.44	10.00
Nitrate Removal & Retention (NR)	2.56	Moderate	10.00	Higher	5.41	10.00
Carbon Sequestration (CS)	8.20	Higher			8.10	
Organic Nutrient Export (OE)	5.97	Higher			5.50	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.69	Higher	1.03	Moderate	5.87	1.80
Amphibian & Turtle Habitat (AM)	2.87	Lower	1.22	Lower	4.82	2.83
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	7.23	Moderate	2.50	Lower	6.00	2.50
Pollinator Habitat (POL)	9.09	Higher	0.00	Lower	7.32	0.00
Native Plant Habitat (PH)	8.82	Higher	5.12	Moderate	6.64	4.44
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.67	Lower		2.40
Wetland Ecological Condition (EC)			7.11	Higher		8.33
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.40	Lower	0.52	Lower	6.43	0.60
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	5.76	Higher	10.00	Higher	7.51	10.00
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.74	Moderate	2.66	Moderate	4.52	1.75
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.72	Lower	0.73	Lower	2.89	1.70
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.73	Higher	3.83	Moderate	6.99	3.38
WETLAND CONDITION (EC)			7.11	Higher		8.33
WETLAND RISK (average of Sensitivity & Stressors)			0.44	Lower		2.37
·	NOTE A					

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - FC-Trib1-W-01
Investigator Name:	Matt Alexander
Date of Field Assessment:	12 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.186357
Longitude (decimal degrees):	66.207911
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	1.2
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	100
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

vestigator: Matt Alexander

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
ı		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including rox >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	- 1	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measi tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	, , , , , , , ,
		>100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within the is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	1	
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		>100 hectares.	0	1
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, neavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
	Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped to the contains of the con	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider:	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view aerial imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can
		The Afx segetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, ente "1". [* NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	r	drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, f POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	11. "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation" The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,		POLv, SBMv, WBFv, WBNv) See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
7	Woody Uniqueness	1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of Therhaceous vegetation* The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		POLv, SBMv, WBFv, WBNv)
7	Woody Uniqueness	11". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:		POLv, SBMv, WBFv, WBNv] See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
	Woody Uniqueness Local Vegetated Cover Percentage	1". [* NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"	0	POLv, SBMv, WBFv, WBNv] See above. Do not consider confler plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv]
	Local Vegetated Cover	11. "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of Therhaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is:	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
	Local Vegetated Cover	11. "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of Therbaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" I' NOTE: woody cover = trees & shrubs laller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: <p>45% of the land.</p>	0	POLv, SBMv, WBFv, WBNv] See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
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	Local Vegetated Cover	11. "INOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of Therhaceous vegetation"] The AAS vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AAS vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "2" and continue to OF8. If not, consider: The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AAS vegetation is >10% woody but uplands within 100 m of the wetland edge have <10% woody but uplands within 100 m of the wetland edge have <10% woody but uplands wetlands within 100 m of the wetland edge have <10% woody but u	0	POLv, SBMv, WBFv, WBNv] See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
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9	Local Vegelated Cover Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	***!". NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of **Therbaceous vegetation**] The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations s: -5% of the land. 51o 20% of the land. 50 to 60% of the land. 50 to 60% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m. 100 - 500 m.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	POLv, SBMv, WBFv, WBNv) See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route.
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OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	1	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m. >500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an
01.12	Trialio / tooss	separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13		The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	< 50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	1	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	1	
		2-5 km.	0	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km. 10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non-			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (WSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	mouning. [1101]
		Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable	0	
OF18	Relative Elevation in	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then		[FA, NR, Sens, SFSv, WCv, WSv]
0540	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.15	
OF19 OF20	Water Quality Sensitive Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with proportioning of mobile, but no proportions and indicates a problem with proportions of mobile.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
J1 ZU	Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
OF21	Degraded Water	all wetlands in this region. The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
0121	Downstream			inay ase existing data, or monitor waters as part or this wettand assessment. [NTV, TTV, STV]
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		The common is present within 3 km downstope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
0.55		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AM may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Altas of Canada (Toporama): http://attas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	1	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised	0	
OF23	Unvegetated Surface in	In the proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots.	Ü	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	
		10 to 25%.	0	
		>25%.	0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following: (a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	1	
		Southward (S, SW). south-facing contributing area.	0	
0527	Internal Flow Distance	Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OF26	(Path Length)	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	, , ,	<10 m.	0	
		10 - 50 m. 50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCV, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been cheeked. In NR, the list of sheeked waters is at
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked/
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites: http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	l	aters.html
		nttp://www.saimonatias.com/atlanticsaimon/canada-eas/index.1.ntml nttp://atlanticsaimonrederation.org/rivers/introduction.ntml Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	1	[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to hearby waters likely to contain Atlantic salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	0	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv, WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a mapped Atlantic Coastal Plain Flora Buffer	0	,
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file. Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species). None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.	_	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity, Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity, <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 15 (outside of region shown in map, change toblants.	0	This was provided by Dr. David Leske. [WBNv]
OF32	Wintering Deer or Moose Concentration Areas	If AA is on private land with no information, change to blank (not 0). If on publicicrown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinterIngAreas. Otherwise: Enter: yes= 1, no= 0.	0	[SBM]
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change thank (not 0).	0	[PU]
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank.	0	[PU]
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monifored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends moniforing area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank.	0	[PU]
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tablank.	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available.		"Private lands" may include those owned or leased by non-governmental organizations, e.g., charitable conservation land trusts, DUC, TNC. [PU, STR]
		New limber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited. Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaliter conditions.	0	
		Conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 12 Sept 2019	Site Identifier: FC-Trib1-W-01	Investigator:	Matt Alexand	le

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to die	Condition of the	D. I	Definitions in 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
NA sh nclud adja lescn	ould also include part of it the open water part adj cent " is used synonymou bed features along their it	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Decladous stricts in this region losality include distinctions, Labriator lea, adjusting (worked), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the threes/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :		F3 was marked 2 or greater, SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for the smaller-dbh trees, to serve as a basis for the smaller-dbh trees.
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	0	
		coniferous, >40 cm diameter.	1	
	Halahi Olasa	broad-leaved deciduous >40 cm diameter.	0	TAM INIV NO DIL COM Coord
D	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	1	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
		B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely-absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0	
7	Large Snags (Dead Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at at least 2 m tall. [POL, SBM, WBN]
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tail. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]
7	Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0	at least 2 m tall. [POL, SBM, WBN]

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INFINITY BIGGE OF INCIDENS. [F.A., F.K., INVV, INVV, OL., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetaled part of the AA. 50-95% of the vegetaled part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	Эші, seitsj
		AA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA. Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
E10		Several (extensive micro-topography).	0	TAM ND CDM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Son Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[66] (11) 62] (11) (11) (36) (37) (37)
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	1	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		······································
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	• • •
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	1	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	1	or offices that tack showly horrors. [1 oc.]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F10	Dominonos -f.M	>95% of the vegetated area.	0	For this question, include force on well as graminoids and facts. (FC IBM DL DOL C.)
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file. Invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species appear to be absent in the AA, or are present only in trace amount (a rew individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant.	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
1	Upland Edge	Adong the welland-opland boundary, the percent of the opland edge (within 5 in opsobe norm the welland) that is occupied by invasive plant species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
	J	vegetated zone within the wetland. Enter "1" if true, "0" if false.	L	
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23	Eddasii ii o Wollaria	a normal year.		

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225 % of AA Persiste Water Water State Water Water the State W	AA with istent Surface of Summertime or that is Shaded AA that is sled Only onally all Water uation Range s adjacent ponded by ominant Depth is the Classes -	rainstorms), but which is still a welland, is: -17.5% of the AA, or <1% but >0.01 ha never contains surface water. 25.50% of the AA never contains surface water. 25.50% of the AA never contains surface water. 25.075% of the AA never contains surface water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection). 25.075% of the AA never contains surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is changed by the AA that still contains surface water. 25.075% of the AA. 25.076% of the AA at that time is: 25.076% of the water is shaded. 25.076% of the AA. 25.076		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN] Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local lopography. Or if liming and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation is most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland is brief, the answer will be based on the depth of the presistently inundated part of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland is brief, the answer will be based on the depth of the most persistently inundate part of the wetland is brief, the answer will be about the secon
Persiste Water 226 % of Sui Water th 227 % of AA Flooded Seasons 228 Annual \ Fluctuall 230 Depth C Evennes Proportii 331 % of Wa Ponded	AA with istent Surface of Summertime or that is Shaded AA that is Shaded AA that is Seed Only onally all Water unation Range s adjacent ponded by ominant Depth is in Classes -	1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water. 25-50% of the AA never contains surface water. 25-99% of the AA never contains surface water. 25-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA. 299-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection). Identify the parts of the AA that still contain surface water (Bowing or ponded, open or hidden beneath vegetation) even during the driest time of a normal year, i.e., when the AAs surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is a normal year, i.e., when the AAs surface water is a till slowest annual level. At that time, the percentage of the AA that still contains surface water for the AA. 20-50% of the AA. True for many fringe wetlands. At mist day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is: 25.50% of the water is shaded. 20-50% of the AA. 30-50% of t	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN] Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) glant species. In riverine systems, the extent of this zone can be estimated by multipling by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if firming and safety a llow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
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Persiste Water 226 % of Sui Water th 227 % of AA Flooded Seasons 228 Annual \ Fluctuall 230 Depth C Evennes Proportii 331 % of Wa Ponded	Summertime r that is Shaded AA that is Shaded AA that is Sted Only onally all Water uation Range is adjacent ponded by the shade on the shade of	of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is: None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA. 20-50% of the Water is shaded. 20-50% of the water is shaded or no surface water is present then. 25-50% of the water is shaded. 25-50% of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 2-20% of the AA 25-50% of the AA	0 1 1 0 0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0	about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN] Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) glant species. In riverine systems, the extent of this zone can be estimated by multipling by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if firming and safety a llow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Water th Wat	AA that is leed Only onally lal Water uation Range is adjacent ponded by the common of	1-20% of the AA. 20-50% of the AA at that time is: 25% of the water is shaded, on osurface water is present then. 25-25% of the water is shaded. 25-50% of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Water th Wat	AA that is leed Only onally lal Water uation Range is adjacent ponded by the common of	20-50% of the AA. 50-95% of the AA. True for many tringe wetlands. At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at hat time is: <45% of the water is shaded, or no surface water is present then. 525% of the water is shaded. 25-50% of the water is shaded. 50-75% of the water is shaded. 50-75% of the water is shaded. 75% of the AA or <1% of the AA. See that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA. 75% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarity is: <10 cm change (stable or nearly so). 10 cm >50 cm change. 2.5 · 1 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 · 1 m change. 2.5 · 1 m change. 2.6 · 1 m change. 2.7 m change. 2.8 m change. 2.9 m change. 2.9 m change. 2.1 m change. 2.2 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 · 1 m change. 2.5 · 1 m change. 2.6 · 1 m change. 2.7 m change. 2.8 m change. 2.9 m change. 2.9 m change. 2.1 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 · 1 m change. 2.6 · 1 m change. 2.7 m change. 2.8 m change. 2.9 m change. 2.9 m change. 2.1 m change. 2.1 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 m change. 2.6 m change. 2.7 m change. 2.8 m change. 2.9 m change. 2.9 m change. 2.1 m change. 2.1 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 m change. 2.6 m change. 2.7 m change. 2.8 m change. 2	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Water th Wat	AA that is leed Only onally lal Water uation Range is adjacent ponded by the common of	50-95% of the AA. True for many fringe wetlands. Al mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is: -5% of the water is shaded, or no surface water is present then. 525% of the water is shaded. 525% of the water is shaded. 525% of the water is shaded. 50-75% of the water is shaded. 75% of the water is shaded. 100-75% of the water is haded. 100-75% of the water is haded. 100-75% of the water is hade	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Water th Wat	AA that is ded Only onally all Water uation Range s adjacent ponded be ominant Depth is	All mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA that time is: 525% of the water is shaded, 525.0% of the water is shaded. 575% of the water is shaded. 575% of the water is shaded. The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 12,0% of the AA or <1% but >0.01 ha. 505.05% of the AA 505.95% of the AA 505.95% of the AA 505.95% of the AA 100 cm change (stable or nearly so). 10 cm -50 cm change. 505.1 m change. 505.1 m change. 505.1 m change. 505.2 m change. 505.1 m change. 507.1 m change. 508.2 m change. 509.2 m change. 509.2 m change. 509.2 m change. 509.2 m change. 509.3 m change.	0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Water th Wat	AA that is ded Only onally all Water uation Range s adjacent ponded be ominant Depth is	withing the AA at that time is: -55% of the water is shaded, or no surface water is present then. -55% of the water is shaded. -55% of the water is shaded. -55% of the water is shaded. -50-75% of the AA or -1% but >0.01 ha. -50-75% of the AA or -1% but >0.01 ha. -50-75% of the AA or -1% but >0.01 ha. -50-75% of the AA. -50-75% of t	0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Flooded Seasona Flooted Season	AA that is ded Only onally all Water uation Range is adjacent ponded in the common of	5-25% of the water is shaded. 25-50% of the water is shaded. 50-75% of the water is shaded. 575% of the water is shaded. 575% of the water is shaded. The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or -0.01 hectare and -1% of the AA. SKIP to F29. 1-20% of the AA, or -1% but -0.01 ha. 20-50% of the AA. 50-95% of the AA. 50-95% of the AA. 50-95% of the AA. 50-95% of the AA. 10 cm change (stable or nearly so). 10 cm -50 cm change. 10 cm -50 cm change. 12-2 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA is: 10 cm deep. 10 -1 on deep.	0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Flooded Seasona Flooted Season	AA that is ded Only onally all Water uation Range is adjacent ponded in the common of	25-50% of the water is shaded. 50-75% of the water is shaded. 50-75% of the water is shaded. 575% of the water is shaded. The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA, or <1% but >0.01 ha. 20-50% of the AA. 50-95% of the AA. 10 cm shade in surface water level within most of the parts of the AA that contain surface water at least temporarity is: <10 cm shange (stable or nearly so). 10 cm -50 cm change. 1.2 m change. 2.2 m change. 3.2 m change. 3.3 mater smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42 2.4 mounting most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep. 3.5 in deep. 3.5 in deep. 3.5 in deep. 3.7 in deep. 3.7 in deep. 3.8 in deep. 3.9 in deep. 3.7 in deep. 3.7 in deep. 3.8 in deep. 3.9 in deep. 3.9 in deep. 3.9 in deep. 3.0 in	0 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Flooded Seasona Flooted Season	AA that is ded Only onally all Water uation Range is adjacent ponded in the common of	50-75% of the water is shaded. 75% of the water is shaded. The percentage of the A/S area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA or <1% but >0.01 ha. 20-50% of the AA. 50-95% of the AA. 50-95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarity is: <10 cm change (stable or nearly so). 10 cm - 50 cm change. 51 - 1m change. 1-2 m change. 22 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep. 10 cm deep. 1-2 m deep. 1-3 m deep. 1-4 m deep.	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Flooded Seasona Flooted Season	AA that is ded Only onally all Water uation Range is adjacent ponded in the common of	>75% of the water is shaded. The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is: None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1.20% of the AA, or <1% but >0.01 ha. 20.50% of the AA, 50-95% of the AA. 50-95% of the AA. 50-95% of the AA. 1.20 cm change (stable or nearly so). 10 cm -50 cm change. 1.2 m change. 1.2 m change. 1.2 m change. 2.2 m change. 2.2 m change. 2.2 m change. 2.2 m change. 2.3 m change. 2.3 m change. 2.4 m change. 2.5 or m change. 2.5 or m change. 2.5 or m change. 3.6 m change. 3.7 m change. 3.8 m change. 3.9 m change. 3.9 m change. 4.1 cm change. 4.2 m change. 5. or m change. 6. or m change. 6. or m change. 6. or m change. 7. or m change. 8. or m change. 9. or	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Flooded Seasona Flooted Season	al Water uation Range s adjacent ponded bominant Depth	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA, 50-95% of the AA. 595% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is: <10 cm change (stable or nearly so). 10 cm - 50 cm change. 0.5 - 1 m change. - 2 m change. 3 m change. 3 m change. 4 m change. 5 m change. 5 m change. 5 m change. 5 m change. 6 m change. 6 m change. 6 m change. 7 m change. 7 m change. 7 m change. 8 m change. 9 m change. 10 m change. 11 m column D and SKIP TO F42 12 m change. 13 m change. 14 m change. 15 m change. 16 m change. 17 m change. 17 m change. 18 m change. 19 m change. 10 m deep.	1 0 0 0 0 1 0 0 0 0 0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
Seasons Sea	onally all Water uation Range s adjacent ponded before the control of the control	1-20% of the AA, or <1% but > 0.01 ha. 20-50% of the AA, 50-50% of the AA. 50-50% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is: <10 cm change (stable or nearly so). 10 cm : 50 cm change. 0.5 - 1 m change. >2 m change. >2 m change. 2 m change. 3 m change. 3 m change. 4 m change. 5 m change. 6 m change. 6 m change. 6 m change. 7 m change. 1 m column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but > 0). 10 - 50 cm deep. 10 - 1 m deep. 1 - 2 m deep. 1 - 2 m deep. 7 m deep. 1 - 1 m deep. 1 - 1 m deep. 1 - 2 m deep. 1 - 3 m deep. 1 - 3 m deep. 1 - 4 m deep. 1 - 4 m deep. 1 - 7 m deep.	1 0 0 0 0 1 0 0 0 0 0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering welland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
s the AA plus a Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	ial Water uation Range s adjacent ponded b cominant Depth c	20-50% of the AA. 50-95% of the AA. 50-95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarity is: <10 cm change (stable or nearly so). 10 cm - 50 cm change. 51 - 1 m change. 12 m change. 22 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10 cm deep. 10 cm deep. 10 m deep. 11 m deep. 12 m deep. 12 m deep. 13 m deep. 14 m deep. 15 m deep. 16 m deep. 17 u for many fringe wetlands.	0 0 1 0 0 0 0 0 0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS] Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if firming and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as of the most persistently inundated part of the wetland, include surface water in channels and ditches as
sithe AA plus a Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	s adjacent ponded . ominant Depth	50-95% of the AA. -95% of the AA. -95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is: <10 cm change (stable or nearly so). 10 cm -50 cm change. 12-m change. 22-m change. -22-m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10-50 cm deep. 50-51 m deep. 1-2 m deep. -2 m deep. True for many fringe wetlands.	0 0 1 0 0 0 0 0 0	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
sithe AA plus a Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	s adjacent ponded . ominant Depth	>95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarity is: <10 cm change (stable or nearly so). 10 cm -50 cm change. 0.5 - 1 m change. 1.2 m change. 2.2 m change. 2.3 m change. 2.4 m change. 2.5 or m deer than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA. 3. cm deep (but >0). 10 - 50 cm deep. 3. 1 m deep. 3. 1 m deep. 3. 2 m deep. True for many fringe wetlands.	0 1 0 0 0 0 0 0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
sithe AA plus a Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	s adjacent ponded . ominant Depth	10 cm change (stable or nearly so). 10 cm -50 cm change. 05 - 1 m change. 1-2 m change. 2-2 m change. 2-3 m change. 2-3 m change. 2-4 m change. 2-5 m change. 2-6 m change. 2-7 m deep. True for many fringe wetlands.	0 1 0 0 0 0 0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland, include surface water in channels and ditches as
s the AA plus a Connection). 29 Predomi Class 30 Depth C Evennes Proportii 31 % of Wa Ponded	is adjacent ponded. Dominant Depth An Classes -	10 cm - 50 cm change. 05 - 1 m change. 1-2 m change. 2-2 m change. 2-2 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10 - 50 m deep. 10 - 1 m deep. 1- 2 m deep. >2 m deep. True for many fringe wetlands.	0 0 0 0 0 0 1	PR, SR, WBN, WS] If a boat is unavailable, estimate this by considering welland size and local lopography. Or if fiming and safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	ominant Depth	10 cm - 50 cm change. 05 - 1 m change. 1-2 m change. 2-2 m change. 2-2 m change. 2-2 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10 - 50 m deep. 10 - 1 m deep. 1- 2 m deep. >2 m deep. True for many fringe wetlands.	0 0 0 0 0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	ominant Depth	1-2 m change. >2 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10 - 50 cm deep. 10 - 1 m deep. 1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0 0 0 1 0	safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation is most but not all of the wetland is brief, in answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in chamnels and ditches as
Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	ominant Depth	>2 m change. water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0): 10 - 50 cm deep. 10 - 51 cm deep. 1- 2 m deep. >2 m deep. True for many fringe wetlands.	0 0 1 0	safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation is most but not all of the wetland is brief, in answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in chamnels and ditches as
Connection). 29 Predomi Class 30 Depth C Evennes Proporti 31 % of Wa Ponded	ominant Depth	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42 During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is: <10 cm deep (but >0). 10 - 50 cm deep. 10 - 1 m deep. 1- 2 m deep. >2 m deep. True for many fringe wetlands.	0 0 1 0	safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation is most but not all of the wetland is brief, in answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in chamnels and ditches as
29 Predomi Class 30 Depth C Evennes Proportli 31 % of Wa Ponded	ominant Depth	AA, is: -10 cm deep (but >0). 10 - 50 cm deep. 05 - 1 m deep. 1 - 2 m deep2 m deep2 m deep.	0 0	safely allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation is most but not all of the wetland is brief, in answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in chamnels and ditches as
Depth C Evennes Proportion % of Wa Ponded	h Classes -	<10 cm deep (but >0). 10 - 50 cm deep. 05 - 1 m deep. 1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0 0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
Evennes Proportion 31 % of Wa Ponded		10 - 50 cm deep. 0.5 - 1 m deep. 1 - 2 m deep. >2 m deep. True for many fringe wellands.	0 0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
Evennes Proportion 31 % of Wa Ponded		0.5 - 1 m deep. 1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
Evennes Proportion 31 % of Wa Ponded		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
Evennes Proportion 31 % of Wa Ponded			0	
Evennes Proportion 31 % of Wa Ponded		When present, surface water in most of the AA usually consists of (select one):		
Proportion Proportion % of Water Ponded Ponded	Hess of			Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
Ponded F32 Ponded	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	
Ponded F32 Ponded		One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
Ponded	Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: <5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	1	
		5-30% of the water, or it occupies < 100 sq.m cumulatively. Nearly all the surface water is nowing. SKIF to 1.34.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
	led Open Water - num Size	-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
		In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
that is O	that is Open	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		1-4% of the ponded water. Enter *1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		5-30% of the ponded water.	0	
		30-70% of the ponded water. 70-99% of the ponded water.	0	
		100% of the ponded water.	0	
		At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
Zone wit	Zone within Wetland	adjoining uplands from open water within the AA is:		include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		<1 m. 1 - 9 m.	0	oons, on, mon
		1 - 9 m.	0	
		30 - 49 m.	0	
		50 - 100 m.	0	1
35 Flat Sho	Flat Shoreline Extent	> 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0	If several isolated pools are present in early summer, estimate the percent of their collective shoreline
i lat 3110	Flat Snoreline Extent	slope less than about 5% measured within 5 m landward of the water) is:		in several counter process are present in really summer, estimate time percent of timel conective shorteness that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	
		1-25% of the water edge.	0	
		25-50% of the water edge. 50-75% of the water edge.	0	
		>75% of the water edge.	0	1
Robust I	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattall (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
	Ť			
	Ü	1-25% of the emergent vegetation. 25-75% of the emergent vegetation.	0	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open			
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	1	
	Area	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection).		
F39	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwater wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none.	0	
		Intermediate. Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Floating Algae & Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined white visiting the AAL consult lopographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/loporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS, SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	mt, ot, Frt, seis, st, str, waj
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	1	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	1	[WCv]
	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	1	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
		Was measured, and is: [enter the reading in the column to the right.]		
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	
	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	conductivity	TDS is: [Enter the reading in ppm or mg/L. in the column to the right, if measured, or answer next row.] Conductivity is: [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
	beaver Frobability	Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	1	
		vegetated areas near surface water.	^	
F50	Groundwater Strength	vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	Groundwater Strength of Evidence	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	0	Adhere to these criteria strictly — do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater sepse may be most noticeable as orange discoloration in ce formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5.	0	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA	0	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
	of Evidence	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	evidence. Consult topographic maps to delect breaks in slope described here. Rust deposts associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
	of Evidence	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 2.2% or the AA has no surface water outlet (not even seasonally).	0 0 1 1 0 0	evidence. Consult lopographic maps to defect breaks in slope described here. Rust deposts associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than - 1 km), this may be estimated using Google Earth to determine the minimum and
	of Evidence	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of -5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is > 5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally).	0 0 1	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
F51 Note fo	of Evidence	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of -5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6.10%. 1006. 1007. 1008. 1009.	0 0 1 1 0 0 0 0	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
F51 Note fo adjacer F52	of Evidence Internal Gradient r the next three quest tt. In many situations, the	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AMD the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 22% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. >10%. Ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are see questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial	0 0 1 1 0 0 0 0	evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
F51 Note fo adjacer F52	of Evidence Internal Gradient In the next three quest It. In many situations, It	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater, who so of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Welther of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. The HA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are used questions are best answered by measuring from aerial images.	0 0 1 1 0 0 0 0	evidence. Consult lopographic maps to defect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to stransphones. If the welland is large (longer than 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
F51 Note fo adjacer F52	of Evidence Internal Gradient r the next three quest tt. In many situations, the	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater, which is the period of the AA as a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. >10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are used questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: 5%. 5 to 30%.	0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	evidence. Consult lopographic maps to deflect breaks in slope described here. Rust deposts associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
F51 Note fo adjacer F52	of Evidence Internal Gradient r the next three quest tt. In many situations, the	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of -5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. 10%. 10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are uses questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, confer plantations) is:	0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	evidence. Consult lopographic maps to defect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]

FieldF form - Non-tidal Page 4 of 5

er Slope s or Steep Banks or Expanded and i History consumptive - Actual or	Within 30 m upslope of where the welland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE): Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of: -11% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wellands. 2.5%. 5.30%. 3.30%. 1.30%.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN] Do not include uptumed trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded and it History	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: <11% (flat — almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%. 5.30%. 5.30%. 5.30%. 10 the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavalion, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3.20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 4-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago. evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: <25%. 25%. 25%. 25%.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturmed trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded and it History	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: -1% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%. 3-30%. 3-30%. 3-30%. 3-30%. 1 the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 4:10 years ago. Burned 11:30 years ago. Burned 11:30 years ago. Burned 3:0 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained traits that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	1 0 0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded and it History	percent slope of: <1% (filst – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5% 5.30% 5.30% 5.30% in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 11:30 years ago. Burned 11:30 years ago. Burned 3:00 years ago. Burned 3:00 years ago. Burned 3:00 years ago. Burned 5:00 years ago. For year year year year. For year year year. For year year year. For year year year. For year year. 5:00%.	0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded and History	2-5%. 5-30%. 3-30%. 1-3	0 0 0 0 0 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded and History	5-30%. 5-30%. 5-30%. 5-30%. 5-30%. 5-30%. 1 in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are univegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago. Burned 11-30 years ago. Burned 13-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255-056.	0 0 0 0 1 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded and History	s 30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 40-10 years ago. Burned 1:30 years ago. Burned 5:0 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	0 0 0 1 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded and History	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pils (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 11-30 years ago. Burned 11-30 years ago. Burned 21-10 years ago. Burned 29 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255-09%.	0 1 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded and History	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 19 of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255-096.	1 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
and i History	previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1:30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: <25%. >50%.	0 0 0 0 0 0	NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR
oility -consumptive	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%. 25-50%.	0 0 0 0 0 0	
oility -consumptive	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%. 25-50%.	0 0 0 0 0	
oility -consumptive	Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 13-30 years ago. Burned 20 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: <25%. <25%. <25.50%.	0 0 0 0 0 0 0	
oility -consumptive	Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 3-30 years ago, or no evidence of a burn and no data. The maximum percentage of the weltand that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0	
oility -consumptive	Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years ago. Burned 6-10 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25.50%.	0 0 0 0	
oility -consumptive	More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 190 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.	0 0 0	
oility -consumptive	Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 13-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	0 0 1	
-consumptive	Burned 6-10 years ago. Burned 11-30 years ago. Burned 13-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.	0 0 1	[PU, STR, WBFv]
-consumptive	Burned 11-30 years ago. Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.	0 1	[PU, STR, WBFv]
-consumptive	Burned -30 years ago, or no evidence of a burn and no data. The maximum percentage of the weltand that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: -25%. 25-50%.	1	[PU, STR, WBFv]
-consumptive	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.	0	[PU, STR, WBFv]
-consumptive	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: <25%. 25-50%. >50%.	0	[PU, STR, WBFv]
	25·50%. >50%.	0	
	>50%.		
		1	
	Assuming access permission was granted, select ALL statements that are true or the AA as it currently exists.	0	[DLL CTD]
			[PU, STR]
ential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
	Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
sited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	trail.]		
	<5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	
	5-50% and no inhabited building is within 100 m of the AA.	0	
	5-50% and inhabited building is within 100 m of the AA.	0	
	50-95%, with or without inhabited building nearby. >95% of the AA with or without inhabited building nearby.	0	
uently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note	U	[AM, PH, PU, SBM, STR, WBF, WBN]
l visited	above.]		(Pan, 111, 10, 30m, 311, 110m)
	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
	5-50%. 50-95%.	0	
	>95% of the AA.	0	
P - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
P - Wildlife ection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
sumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
visioning Services)	i ow-impact commercial timber harvest (e.g., selective thinning)	n	
	Waterfowl hunting.	0	1
	Fishing.	0	1
	Trapping of furbearers.	0	
	None of the above.	1	
	The closest wells or water bodies that currently provide drinking water are:		[NRv]
nestic Wells	Within 0-100 m. of the AA.	0	
nestic Wells		0	1
nestic Wells	100-500 m. away.	1	1
nestic Wells	100-500 m. away. >500 m. away, or no information.		
ect	Wildlife ion nptive Uses oning Services)	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true. Wildlife Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true. Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply. Low-impact commercial timber harvest (e.g., selective thinning). Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms. Waterfowl hunting. Fishing. Trapping of furbearers. None of the above. The closest wells or water bodies that currently provide drinking water are: Within 0-100 m. of the AA. 100-500 m. away.	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true. Wildlife

FieldF form - Non-tidal Page 5 of 5

gator: Matt Alexander	Site Identifier: FC-Trib1-W-01	יט	ate: 12 September 2019		
essor (S) Data Form for Non-Tidal	Wetlands, WESP-AC for New B	runswick, Version 2			
Aberrant Timing of Water Inputs	Wetterlieb. Web. Ac for New B	Turiowick: Voloion 2.			
,	the standard of the standard o				
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer times		
Stormwater from impervious surfaces that drains directly to the wetla	, ,				
Water subsidies from wastewater effluent, septic system leakage, si	now storage areas, or irrigation.				
Regular removal of surface or groundwater for irrigation or other cor	sumptive use.				
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	ulates inflow to the wetland.			
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).			
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	l ditch.				
Artificial drains or ditches in or near the wetland.					
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).				
Logging within the wetland.					
Subsidence or compaction of the wetland's substrate as a result of r	nachinery, livestock, fire, drainage, or off road vehicles.				
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "Os" for					
If any items were checked above, then for each row of the table below To estimate effects, contrast the current condition with the condition is		no measurable effect on the timing of water conditions in any part of	the AA, then leave the "0's" for the scores in the following row		
	Severe (3 points)	Medium (2 points)	Mild (1 point)		
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.		
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.		
Score the following 2 rows only if the altered inputs began within pass	, ,	* *			
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.		
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.		
			Sum=		
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow stora	either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.				
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FieldS form Non-tidal 1

	Excessive Sediment Loading from Contrib	buting Area			
	In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV, I	PH, SRv, STR]	
	Erosion from plowed fields, fill, timber harvest, dirt roads, vegetal	tion clearing, fires.			
	Erosion from construction, in-channel machinery in the CA.				
	Erosion from off-road vehicles in the CA.				1
	Erosion from livestock or foot traffic in the CA.				
	Stormwater or wastewater effluent.				1
	Sediment from road sanding, gravel mining, other mining, oil/ gas	s extraction.			1
	Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
	Other human-related disturbances within the CA.				
		nelow, assign points (3, 2, or 1 as shown in header) in the last columnate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
		Severe (3 points)	Medium (2 points)	Mild (1 point)	
	Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	2
	Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
	Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
	AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	1
	* high-intensity= extensive off-road vehicle use, plowing, grading, soil or sediment.	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	5
				Stressor subscore=	0.42
5	Soil or Sediment Alteration Within the Ass	sessment Area			
	In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	n the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pas	st 100 years or since wetland was created or restored (whichever	
	Compaction from machinery, off-road vehicles, livestock, or mou	ntain bikes, especially during wetter periods.			
	Leveling or other grading not to the natural contour.				
	Tillage, plowing (but excluding disking for enhancement of native	nlants)			
		e piarits).			
	Fill or riprap, excluding small amounts of upland soils containing	organic amendments (compost, etc.) or small amounts of topsoil im	ported from another wetland.		
	Fill or riprap, excluding small amounts of upland soils containing Excavation.	<u> </u>	ported from another wetland.		
	1 11 0	<u> </u>	oported from another welland.		
	Excavation.	organic amendments (compost, etc.) or small amounts of topsoil im	pported from another wetland.		
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland.	organic amendments (compost, etc.) or small amounts of topsoil im	nported from another wetland.		
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause s Artificial water level or flow manipulations sufficient to cause eros	organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. Sion or stir bottom sediments.		ve the "Os" for the scores in the following rows. To estimate	
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause s Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table b	organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. Sion or stir bottom sediments.		ve the "O's" for the scores in the following rows. To estimate Mild (1 point)	
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause s Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table b	organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. selow, assign points. However, if you believe the checked items did to cked items never occurred or were no longer present.	not measurably aller the soil structure and/or topography, then lea	<u> </u>	0
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table beffects, contrast the current condition with the condition if the chec	organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. selow, assign points. However, if you believe the checked items did to cked items never occurred or were no longer present. Severe (3 points)	not measurably alter the soil structure and/or topography, then lea Medium (2 points)	Mild (1 point)	0 0
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checks Spatial extent of altered soil:	organic amendments (compost, etc.) or small amounts of topsoil important in the compost of topsoil important in the composition of stir bottom sediments. Sion or stir bottom sediments. Selow, assign points. However, if you believe the checked items did to cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any).	not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checks patial extent of altered soil: Recentness of significant soil alteration in wetland:	organic amendments (compost, etc.) or small amounts of topsoil important in the compost of the composition o	not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0
	Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause eros If any items were checked above, then for each row of the table beffects, contrast the current condition with the condition if the checks patial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. selow, assign points. However, if you believe the checked items did to cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing. Long-lasting, minimal veg recovery.	not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib1-W-01

Date: 12 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.186357, 66.207911

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	1.28	Lower	0.29	Lower	2.72	0.38
Stream Flow Support (SFS)	6.15	Moderate	5.66	Moderate	3.28	3.30
Water Cooling (WC)	5.45	Higher	6.74	Higher	3.63	4.06
Sediment Retention & Stabilisation (SR)	2.41	Moderate	6.85	Moderate	4.81	4.16
Phosphorus Retention (PR)	3.92	Moderate	5.90	Higher	5.69	5.67
Nitrate Removal & Retention (NR)	1.72	Lower	10.00	Higher	4.89	10.00
Carbon Sequestration (CS)	3.77	Moderate			6.19	
Organic Nutrient Export (OE)	7.65	Higher			6.39	
Anadromous Fish Habitat (FA)	7.01	Higher	5.82	Higher	4.29	4.30
Resident Fish Habitat (FR)	5.87	Moderate	5.92	Higher	3.50	4.20
Aquatic Invertebrate Habitat (INV)	10.00	Higher	7.32	Higher	7.52	5.19
Amphibian & Turtle Habitat (AM)	5.08	Moderate	4.11	Moderate	5.99	4.59
Waterbird Feeding Habitat (WBF)	7.12	Higher	2.50	Moderate	5.67	2.50
Waterbird Nesting Habitat (WBN)	4.22	Moderate	0.00	Lower	3.61	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	9.76	Higher	0.00	Lower	8.09	0.00
Pollinator Habitat (POL)	9.43	Higher	0.00	Lower	7.59	0.00
Native Plant Habitat (PH)	8.05	Higher	6.02	Moderate	6.33	5.23
Public Use & Recognition (PU)			2.00	Lower		1.75
Wetland Sensitivity (Sens)			6.58	Higher		4.17
Wetland Ecological Condition (EC)			6.39	Moderate		7.92
Wetland Stressors (STR) (higher score means more stress)			4.40	Moderate		3.88
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	6.15	Higher	0.29	Lower	2.72	0.38
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.30	Moderate	8.79	Higher	5.79	8.30
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	8.66	Higher	6.95	Higher	6.36	4.69
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	6.49	Higher	4.80	Moderate	5.30	3.85
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.42	Higher	4.02	Moderate	7.72	3.49
WETLAND CONDITION (EC)			6.39	Moderate		7.92
WETLAND RISK (average of Sensitivity & Stressors)			5.49	Higher		4.03
	NOTE: A coor	e of 0 does not	moon the fune	tion or bonofit i	a abaant from t	as wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - FC-Trib1-W-02
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	14 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.185552
Longitude (decimal degrees):	-66.204419
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	5.1
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	80
What percent (approx.) of the wetland were you able to visit?	80
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador (2)	0	
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
DF3	Ponded Water &	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
ЛЗ	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	4
		1 to 10 hectares.	0	4
		10 to 100 hectares. >100 hectares.	0	
)F4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
J1 7	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Comuci	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	4
		1 to 10 hectares. 10 to 100 hectares.	0	4
		10 to 100 hectares. 100 to 1000 hectares.	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
DF5	Distance to Large	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer	0	To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
	Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is: <50 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground,	1	GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		awn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaps <50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	-
DF6	Herbaceous Uniqueness	None of the above (the closest patches or corridors which are that large are >5 km away). The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter *3* and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing
510	Herioaceous Offiqueness	The ArX segetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The ARX segetation cover is >10% herbaceous* but uplands within 10 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous wegetation".		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PHv POLv, SBMv, WBFv, WBNv]
OF7	Woody Uniqueness	The AA's vegetation cover is >10% woody' but uptands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uptands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uptands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		[* NOTE: woody cover = trees & shrubs taller than 1 m.]		
DF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	-
		5 to 20% of the land. 20 to 60% of the land.	0	-
		20 to 60% of the land.	0	1
		>90% of the land. SKIP to OF10.	1	1
DF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	-
	Distance by D. 11	Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
	Distance by Road to Nearest Population	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
OF10		<100 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
OF10	Center			
OF10	Center	100 - 500 m.	1	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
OF10	Center	0.5- 1 km.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
OF10	Center		0 0	

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads
0513	Distance to Dooded	The distance from the AA analysis the planet (but any only a party of the first Complete the complete transfer to		hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
		<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated by those readiles.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km.	0	
		1 -2 km. 2-5 km.	1	
		2-5 KM. 5-10 km.	0	
		>10 km.	0	1
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
		10-40 km.	0	
OF16	Upland Edge Contact	Select one:	U	[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water.	0	,
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	1	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
0517	Fland Danner from Nam	will be true for most assessments done with WESP-AC.		In the Control of the
OF17	Flood Damage from Non- tidal Waters			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
		Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye att"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.18	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which		Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
	Contributing Area (Catchment)	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raisec	0	
OE33	Unwagatated Curface in	bog).	U	ICA INN/ MDv DDv SDv STD MCv MSvil
UF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upstope) that is comprised of buildings, roads, parking lots other pevement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		<10%. 10 to 25%.	0	
		10 10 2070.	v	İ
		>25%.	0	

OF24				
	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present, (b) input channels have been straightened.		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	- 1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
				• • • • • •
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	0	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	- 1	
	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inle
	(Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.		
			0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.].		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants. Rare worksheet of the accompanying Supplnfo file, or the AA is within a	1	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer		
			0	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		rriesence of one of more of the waterbird species (WBF, WBN) of conservation concern as listed in the wildline_kare worksheet of the accompanying Supplinfo file.	0	
		accompanying Supplinio lite. Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	0	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
JF30	(IBA)	III Google Earth, open the Ninz life that accompanies his calculator, called BAS_Canada. The AAA is all of part of an officially designated. IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0521	` ,	•		1 11 2
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	0	This was provided by Dr. David Leske. [WBNv]
		>30 (enter 3). If outside of region shown in map, change to blank .		
OF32	Wintering Deer or Moose	30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
OF32	Wintering Deer or Moose Concentration Areas	>30 (enter 3). If outside of region shown in map, change to blank .	0	[SBM]
OF32		30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
		30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
OF33	Concentration Areas	30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Concentration Areas Other Conservation	30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected		
OF33	Concentration Areas Other Conservation	s-30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
OF33	Concentration Areas Other Conservation Designation	30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) or its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information.	0	[PU]
OF33	Concentration Areas Other Conservation	30 (enter 3). If outside of region shown in map, change toblank. If AAI so n private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AAI is all or part of an area designated by government, IFIST Nations, or the Nature Conservancy Ocanada (NICC) for its exceptional ecological features or highly infact natural conditions. Enter: yes=1, no=0. If uncertainc, consult NICC are		
OF33	Concentration Areas Other Conservation Designation	s 30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions: Enter: yes=1, no=0. If uncertain, consult NCC aragencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
OF33	Concentration Areas Other Conservation Designation Conservation Investment	30 (enter 3). If outside of region shown in map, change toblank. If AAI is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area—but also include if the AAI is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) or its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AAI is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tiblank (not 0).	0	[PU]
OF33	Concentration Areas Other Conservation Designation	s 30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions: Enter: yes=1, no=0. If uncertain, consult NCC aragencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
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OF33 OF34 OF35 OF36	Concentration Areas Other Conservation Designation Conservation Investment Miligation Investment Sustained Scientific Use Calcareous Region	if AAI is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DearWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area—but also include if the AAI is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AAI is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tablank (not 0). The AAI is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AAI is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AAI is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3) in next column). The AAI is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3) in next column). The AAI is not accent to the AAI or year of the AAI in Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New limber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently p	0 0 0	[PU] [PU] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp. [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
OF33 OF34 OF35 OF36	Concentration Areas Other Conservation Designation Conservation Investment Miligation Investment Sustained Scientific Use Calcareous Region	if AAI is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNiB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AAI is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly inlact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AAI is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AAI is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AAI have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AAI is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3) in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent information if available. New ti	0 0 0 0 0 0 0 1	[PU] [PU] [PU] [PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,

C	Pate: 14 October 2019	Site Identifier: FC-Trib1-W-02	Investigator:	Derrick Mi	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

				200 5
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	1	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
		the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The		
nclud ' adja descri	e the open water part ad cent " is used synonymo bed features along their	the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador lea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is ~25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	ueesisiitubs is <23% iiloss, iileit quesiioit i Tilligiit be -b1 . [63, iivv, iiv, F1, F0L, 3bw, 3eiis]
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
Vote :	If none of top 4 rows in	F3 was marked 2 or greater, SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	0	
-	· ·	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	1	
.0	Woody Diameter Classes	Main ALL the types that comprise >>% or the woody carropy cover in the AA or >>% or the wooded areas (it arry) along its uprand edge (perfineter). The edge should include only the frees whose canopies extend into the AA. conferous, 1-9 cm diameter and >1 m fall.	1	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th minimum 5% canopy requirement in this question. The trees and shrubs need not be weltland species
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	0	
		hand hand desidence 40 and desidence		
6	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM. INV. NR. PH. SBM. Sens]
6	Height Class Interspersion	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
6		Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
6		Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	[AM, INV, NR, PH, SBM, Sens]
6		Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
6		Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	[AM, INV, NR, PH, SBM, Sens]
7	Interspersion Large Snags (Dead	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0 0	Snags are dead slanding trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0 0	
7	Interspersion Large Snags (Dead	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0	Snags are dead slanding trees that often (not always) lack bark and foliage. Include only ones that an
77	Interspersion Large Snags (Dead Standing Trees)	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

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none of the upland edge (invasives apparently absent), or AA has no upland edge. 1 species cannot be identified, answer "none". [PH, STR]	
some (but <5%) of the upland edge.	
5-50% of the upland edge.	
most (>50%) of the upland edge. F22 Fringe Wetland During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the O [WBF, WBN, WCv]	
Pringe wetland Using most of the year, open water winn or agazent to the vegetated part of the wetland is much wider than the maximum worth of the year, open water winn or agazent to the vegetated part of the wetland is much wider than the maximum worth of the year, open water within the wetland. Either 1" files.	
F23 Lacustrine Welland The vegetated part of the AA is within or adjacent to a body of non-lidal standing open water whose size exceeds 8 hectares during most of 0 [FR, PR, PU, WBF, WBN]	
a normal year.	

FieldF form - Non-tidal Page 2 of 5

F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	<u> </u>	0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		
r 34		<1 m.	0	SBM, Sens, SR, WBN]
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the second of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 2.75% of the water edge. 2.75% of the water edge. 3.75% of the water	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 50-75% of the water edge. 50-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Floating Algae & Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCV, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Agnere to these criteria strictly - oo hot use personal judgment assed on ren conditions, pH, or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, If known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		The gradient along most of the now pain within the AATS. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52	nt. In many situations, the Vegetated Buffer as %	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		, , , ,,,,, son, son, son, son, the
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		27070, or all the area within 30 in or the AA edge is other wellands. 3NP to P35.	1	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
	D # 01	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	(ND DD C CD)
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	1
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years.	0	1
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	U	[PU, STR]
0,	Uses - Actual or			[0, 0.11 ₄
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickels. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or requiar quided interpretive tours.	0	-
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the trait.)		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
7/1	F	>95% of the AA with or without inhabited building nearby.	1	IAM DIL DIL COM CTD WOF WON!
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	riica	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
		Waterfowl hunting.	0]
		Fishing.	0	1
		Trapping of furbearers.	0	
65	Domestic Wells	None of the above. The closest wells or water bodies that currently provide drinking water are:	1	[NRv]
UU	Domestic Wells			pusy
		Within 0-100 m. of the AA.	0	4
		100-500 m. away. >500 m. away, or no information.	0	
			1	(ALL DR)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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gator: Derrick Mitchell	Site Identifier: FC-Trib1-W-02		Date: 14 October 2019	
essor (S) Data Form for Non-Ti	dal Wetlands. WESP-AC for New B	runswick. Version 2.		Dat
Aberrant Timing of Water Inputs				Dat
	likely to have caused the timing of water inputs (but not necessarily their	r valuma) to chift by hours, days, or weeks, becoming either more	mutad (emallar ar loss fraquent peaks spread over langer time	
	shy (larger or more frequent spikes but over shorter times). [FA, FR, IN]		muteu (smailer of less frequent peaks spread over longer times	
Stormwater from impervious surfaces that drains directly to the	e wetland.			
Water subsidies from wastewater effluent, septic system leak	age, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or oth	er consumptive use.			
Flow regulation in tributaries or water level regulation in adjoin	ing water body, or other control structure at water entry points that regu	lates inflow to the wetland.		
*	from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, de	ad-end ditch.			
Artificial drains or ditches in or near the wetland.				
Accelerated downcutting or channelization of an adjacent or in	ternal channel (incised below the historical water table level).			
Logging within the wetland.				
Subsidence or compaction of the wetland's substrate as a res				
Straightening, ditching, dredging, and/or lining of tributary cha		no managerable offers on the timing of vector conditions in any part of	of the AA than leave the "O's" for the searce in the following row	
	e below, assign points. However, if you believe the checked items had n dition if the checked items never occurred or were no longer present.	o measurable effect on the uning of water conditions in any part o	n uie nn, alen leave uie -0 s -101 tile scoles III tile following ron	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began with	in past 10 years, and only for the part of the wetland that experiences th	ose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
			Sum=	
Stormwater or wastewater effluent (including failing septic sys	rring in either the wetland or its CA that is likely to have accelerated th			(
In the last column, place a check mark next to any item occu Stormwater or wastewater effluent (including failing septic sys Metals & chemical wastes from mining, shooting ranges, snown pri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi	rring in either the wetland or its CA that is likely to have accelerated the terms), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA.	tions from National Pollutant Release Inventory and view KMZ ove	TR/ erlay in Google Earth. https://www.ec.gc.ca/inrp-	
In the last column, place a check mark next to any item occu Stormwater or wastewater effluent (including failing septic sys Metals & chemical wastes from mining, shooting ranges, snow npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi If any items were checked above, then for each row of the tabil	rring in either the wetland or its CA that is likely to have accelerated the tems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local	ions from National Pollutant Release Inventory and view KMZ ove	TR/ erlay in Google Earth. https://www.ec.gc.ca/inrp-	
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In the last column, place a check mark next to any item occu Stormwater or wastewater effluent (including failing septic sys Metals & chemical wastes from mining, shooting ranges, snow npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi If any items were checked above, then for each row of the tabil	tring in either the wetland or its CA – that is likely to have accelerated the tems), landfills, industrial facilities. y storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA. e below, assign points. However, if you believe the checked items did no mith the condition if the checked items never occurred or were no long.	ions from National Pollutant Release Inventory and view KMZ ove of cumulatively expose the AA to significantly higher levels of conta ger present.	rlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the	
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FieldS form Non-tidal 1

	buting Area						
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]				
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.						
Erosion from construction, in-channel machinery in the CA.							
Erosion from off-road vehicles in the CA.							
Erosion from livestock or foot traffic in the CA.							
Stormwater or wastewater effluent.							
Sediment from road sanding, gravel mining, other mining, oil/ gas extraction.							
Accelerated channel downcutting or headcutting of tributaries due to altered land use.							
Other human-related disturbances within the CA.							
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,				
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.				
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.				
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.				
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.				
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0			
soil or sediment.							
	sessment Area		Stressor subscore=	0.00			
soil or Sediment Alteration Within the Ass	sessment Area the welland that is likely to have compacted, eroded, or otherwise a	illered the welland's soil. Consider only items occurring within pa	Stressor subscore=				
soil or Sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	the wetland that is likely to have compacted, eroded, or otherwise a	illered the wetland's soil. Consider only llems occurring within pa	Stressor subscore=				
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib1-W-02

Date: 14 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.185552, -66.204419

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.54	Higher	0.37	Lower	5.99	0.45
Stream Flow Support (SFS)	4.69	Moderate	3.10	Moderate	2.50	1.81
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	5.71	Higher	0.00	Lower	6.95	0.33
Nitrate Removal & Retention (NR)	1.94	Lower	1.75	Lower	5.03	2.67
Carbon Sequestration (CS)	8.92	Higher			8.41	
Organic Nutrient Export (OE)	5.06	Moderate			5.02	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.46	Moderate	0.59	Lower	5.44	1.56
Amphibian & Turtle Habitat (AM)	0.90	Lower	1.01	Lower	3.78	2.70
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.77	Moderate	2.50	Lower	5.61	2.50
Pollinator Habitat (POL)	9.45	Higher	10.00	Higher	7.61	10.00
Native Plant Habitat (PH)	5.94	Moderate	10.00	Higher	5.48	10.00
Public Use & Recognition (PU)			2.33	Lower		1.99
Wetland Sensitivity (Sens)			1.75	Lower		2.73
Wetland Ecological Condition (EC)			8.55	Higher		9.17
Wetland Stressors (STR) (higher score means more stress)			0.39	Lower		2.40
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	4.69	Moderate	0.37	Lower	5.99	0.45
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.32	Higher	1.23	Lower	7.80	1.87
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.30	Moderate	2.17	Moderate	4.34	1.47
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	0.54	Lower	0.61	Lower	2.27	1.62
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.42	Higher	8.75	Higher	6.92	8.75
WETLAND CONDITION (EC)			8.55	Higher		9.17
WETLAND RISK (average of Sensitivity & Stressors)			1.07	Lower		2.57
	NOTE: A	6 0 - 1			e abcent from t	an made and 14

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - FC-Trib1-W-04
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	14 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.194758
Longitude (decimal degrees):	-66.20425
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	4.8
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	80
What percent (approx.) of the wetland were you able to visit?	80
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

The State State The S	#	Indicators	Condition Choices	Data	Definitions/Explanations
And the desiration of the control of	F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
Here Solds Assert Manual Part Solds Assert Man			New Brunswick	1	
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The control of the			Prince Edward Island	0	
Office and process of the common of the comm			Newfoundland-Labrador	0	
List of a treatment of the company o	2		The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
Edit Call Sections Edit 1 - The closes Edit 2 - The closes Edit 1 - The closes Edit 2 - The closes and closes			<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
11-1 Thorons 12-1 Thorons 13-1				0	
The Shederise Service of Differences				0	
The state of weather and surface and produced during most of the gening socion that is both (1) in or algored to the AM and C2 with a state of the s			1 to 10 hectares.	0	
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Section William Section Sectio			>100 hectares.	1	
1911 - 1 Federice 1 to Noncience 1 t	3			ì	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
1.1. Petrolises 10 to 10 blocketes 10 blocke			<0.01 hectare (about 10 m x 10 m).	0	
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Supplied Text The Complete Special of the Complete Special of the Complete Special Sp	1		The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sr
201 - 1 hotelans. 1 to 10 hotelans. 1 to 25 hotelans. 1 to 10 hote		Corridor	< 0.01 hectare (about 10 m x 10 m).	0	
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So m, and not separated from the 375-ha vegetation (and such sections of age to a section of completely separated from the 275-ha vegetation (This is often the answer in relatively undeveloped landscape as on a section of the secti	5	Distance to Large			To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
wom, or improvious surface. Or the AN best contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.] -50 m. but completely separated from the 375 ha wegetated area by those features, and AA does not contain >375 ha of vegetation. -50 5.5 m. but completely separated from the 375 ha wegetated area by those features50 5.5 m. and not separated50 5.5 m.		Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated m, and an experiment with the part of the separated. 9-500 m, and not separated m, and an experiment with the separated by the section by the separated by the section by th				1 s.]	
South Separated by those features 15.5 km, and not separated 15.5 km			<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
Distance by Road of Ward Cover Percentage Local Vegetated Cover Percentage Type of Land Cover Min the SA's wegetation for the content part of the Local Standard Cover Percentage Local Vegetation Cover is 5-10% woody but uplands within 15 km have <10% woody cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous but uplands within 16 km have <10% herbaceous cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous will as grassifile plants in this use of herbaceous wegetation. Prover is 5-10% herbaceous will uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1" in Notice to was a structure of the AA's vegetation cover is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider. The AA's vegetation is 5-10% woody but uplands within 100 m of the we			50-500 m, and not separated.	0	1
S - S km, but separated by those features 0			50-500 m, but separated by those features.	0	1
Need of the above (the closest patches or confidors which are that large are 5 km away). Hetbaceous Uniqueness The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '3' and continue to O'. If not, consider. The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% hetbaceous's but uplands within 10m of the wetland edge have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% herbaceous's but uplands within 10m of the wetland edge have <10% herbacous vegetation. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland ed			0.5 - 5 km, and not separated.	0	
Hetbaceaus Uriqueness The Af S vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so, enter "3" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 10 m of the wetland edge have < 10% herbaceous cover. If so, enter "2" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands. Include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation is > 10% woody' but uplands within 5 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" 1" NOTE: woody cover = trees a shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Local Vegetated Cover Percentage of the Af S to 20% of the land. 5 to 30% of the land. 5 to 3			0.5 - 5 km, but separated by those features.	0	
OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover. If see a shrubs taller than 1 m.] In Coole Vegetatied Cover Percentage The AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is >			None of the above (the closest patches or corridors which are that large are >5 km away).	0	
consider: The AN's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AN's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land50 to 50% of the land50 to 50% of the land50 to 60% of the land50 within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Mithin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Measured along the maintained road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g.,	6	Herbaceous Uniqueness	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, I
The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Torau a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 10 cools of the land. 20 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 30 of 10 e90% of the land. 30 of 10 e90% of the land. 30 of the land. 40 of 10 e90% of the land. 40 of 10 e9	7	Woody Uniqueness		0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Percentage Percentage Percentage Procentage Percentage Procentage P			The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 50 to 90% of the land. 60 to 90% of the land. 70 to 60% of the land. 80 to 90% of the land. 10 to 90% of the land. 90% of the land. 10 to 90% of the land. 10			The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. 590% of the land. 590% of the land. 60 to 90% of the land. 590% of the land. 60 to 90% of the lan	8				In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. 590% of the land. 590% of the land. 60 to 90% of the land. 590% of the land. 60 to 90% of the lan			S:		
20 to 60% of the land. 60 to 90% of the land. SKIP to OF10. Type of Land Cover Alteration Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confer plantalion. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 m			<5% of the land.	0	
60 to 90% of the land. 50% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Alteration Distance by Road to Nearest Population Center On Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: 100 m. 100 square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure here route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure here route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure here. Settlements (click on Place Names in menu) or other areas not close to mapped settlements in 1.5 km.					
- 590% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 - 500 m. 0.5 1 km. 1 - 5 km. 1 - 5 km.					
Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center On the content of the c				0	
Alteration Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Nearrest Population Center Center 100 m. 100 - 500 m. 0.5 + 1 km. 1 - 5 km.				1	
Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (c5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Distance by Road to Nearest Population Center 100 m.	9		Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center Population cen		Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, the Hall, and daw and measure tender in 100 - 500 m. Output Output Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited square kilometer. In Coogle				0	1
Nearest Population Center 100 m. square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure rore route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the rore 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlements of the menu or other areas not close to mapped settlements of the men	10	Distance by Road to			"Population center" means a settled area with more than about 5 regularly-inhabited structures r
Centler 100 m. 0 route. Or use the GeoNB's Draw & Measure loot Freehand Line to draw and measure the route 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlements of the meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1 - 5 km. 1			· · · · · · · · · · · · · · · · · · ·		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
0.5-1 km. 0 which meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1-5 km. 1					route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
1 - 5 km.					Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
				0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
⊳5 km. 0				1	
			>5 km.	0	

OF44	Distance to It	From the control of the AA the distance to the control of the Cont	1	Data-da Michael de Carlos Carl
UF11	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		<10 m.	0	
		10 - 25 m. 25 - 50 m.	0	1
		50 - 100 m.	0	
		100 - 500 m.	1	
OF12	Wildlife Access	>500 m. Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an
UF12	wildille Access	Draw a crice or radius of skin from the center of the Art. In maintains and ariginitiatis can move from the center of the Art O ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	If the, entable the Weitlands sight in Gebrus (despite its offissions) to show surrounding weitlands and roads, while estimating the location of the 5 km cicle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	
		2-5 km.	0	
		5-10 km.	0	
DE4E	Tidal Drawlerite	>10 km.	0	In Coords Earth, measure the distance to the account fleetings.
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km. 1 - 5 km.	0	information if available may be preferable. [FA, WBF]
		5-10 km.	0	
		10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one: The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	[NR, SBM, Sens]
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
			0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
OF17	Flood Damage from Non-	will be true for most assessments done with WESP-AC. Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
01 17	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
		surges.	0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	
		herees, opinied usins, or other measures may party minit usinate or his from shader events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding urrelated to tidal storm surges.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.20	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. JAM, FA, FR, NRV,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
OF21	Degraded Water	all wetlands in this region. The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
0121	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.		may ase existing data, or mornior waters as part or this welland assessment. [MVV, 11VV, 51VV]
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		channel.		
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. National State of the Committee of the Committe	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a lopographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire weltand of which he Ah may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the weltand (not just the AA) by the approximate area of its catchment excluding the area of the weltand itself. When doing the calculation, if ponded water is adjacent to the weltand, include that in the weltand area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	Topographic maps may be viewed online at the National Allas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		0.01 to 0.1.	0	
		0.1 to 1.	1	
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised bog).	0	
OF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots other pavement, exposed bedrock, landstides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		<10%.	1	
		10 to 25%. > 25%.	0	
		ream.	U	<u> </u>

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following: (a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients. This statement is:		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	1	
OF26	Internal Flow Distance	Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat). The horizontal flow distance from the wetland's inlet to outlet is:	0	Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
01 20	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m. 10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites: http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmon/ederation.org/rivers/introduction.html		aters.html
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	[AM, FA, FR, INV, WBF, WBN]
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	U	
		Is probably is not accessed by any anadromous fish species but is known or likely to havother fish at least seasonally.	0	
		is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation Concern	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	1	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
OF30	Important Bird Area	None of the above, or no data. In Google Earth, open the KMZ file that accompanies this calculator, calledBAs_Canada. The AA is all or part of an officially designated.	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the predicted density (pairs per 25 sq, km) of nestling American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3), if outside of region shown in map, change toblank.	0	This was provided by Dr. David Leske. [WBNv]
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	(SBM)
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tollank (not		
OF35	Mitigation Investment	0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		Information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	0	[PU]
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tablank.		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 1	4 October 2019	Site Identifier: FC-Trib1-W-04	Investigator:	Derrick N	litche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	I and to the	Countries of the		Definitions in 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
NA sh nclud adja lescn	ould also include part of i le the open water part adj cent " is used synonymoo lbed features along their i	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegelated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		T hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form Diversity	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Moreilla), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the
		coniferous trees (may include tamarack) taller than 3 m.	5	trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees taller than 3 m. coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
lote :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
,	Heiseld Oless	broad-leaved deciduous >40 cm diameter.	0	TAM INV AID DIL COM Coort
)	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	1	
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
			U	
7	Large Snans (Dead	B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
7	Large Snags (Dead Standing Trees)		0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0	
7	Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.		at least 2 m tall. [POL, SBM, WBN]
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

Fig. 19 September 2 of the support of the Assembly of the September 2 of the September 2 of the Assembly of the September 2 of	ves) resting on the ground surface. Bare ground that is out be counted. Boulders count as bare ground. Wellands added or are dominated by annual plant species tend to have g the early growing season. [AM, EC, INV, NR, OE, POL, PR, tural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]	1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	is:	Sphagi
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tourised by aroun funch, more, funching particularly of the control of process and process	g the early growing season. [AM, EC, INV, NR, OE, POL, PR, It was a season. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]	0 0 0 0 0 1		Thatch
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Counted Integration Processing Processing Counter Counte		0 1 0		
Approach of 10 companied to miss of the insert submits and the miss submits and the miss submits and the miss submits and the miss of th	migratory sandpipers, plovers, and related species, [WBF]	0 0		Ground
Internation	migratory sandpipers, plovers, and related species, [WBF]	0 0		
Internation	migratory sandpipers, plovers, and related species, [WBF]	0	Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	
Digital Inclusions Fine the Air Acknown of upland are:	migratory sandpipers, plovers, and related species, [WBF]	0	Intermediate.	
Fow an image. Fow an image. Fow an image. Fow an image. For including (T - 10% of wegelabed pair of the AR). Namy (isp. widered spillar) "mosal". 10% of the wegelabed AR). Parts of the AR has takes (procedured year). In parts	[†] migratory sandpipers, plovers, and related species. [WBF]	1	1017	,
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Fig. Soli Todarie In parts of the AR had but persistent water, the solution of the progression of the mostly. Excluding the solution of the progression of the mostly in continual of the continual of the progression of the solution of the progression of the pr	migratory sandpipers, plovers, and related species. [WBF]	U		
less of anothy spaced foculations, and use the sole that he by in Agronative of the Menual j Loamy, so this time from critical time from grant and sont make a "ribbon" larger than 2 can when moistened, miled, squeezed, and extended between thumb and forefringer. Plense includes and, boarny south from grant from 2 can when moistened, miled, squeezed, and extended between thumb and configure. Deep Peal to 40 cm depth or granter. Shallow Peal to 40 cm depth or granter. Shallow Peal to 40 cm depth or granter. Shallow Peal to 60 cm depth or granter. This addresses needs of many but not all migratery sandpipers, plovers translated waters shallower shall do not in miss a ribbon when meckened, noted, squeezed, and extended between thumb and formity but not all migratery sandpipers, plovers translated waters not convert to 60 gas and the 60 cm less from the 60 cm less fro	migratory sandpipers, plovers, and related species. [WBF]			Soil Te
believe thurb and foetinger. First schools all, cally, sit, sails hat make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and one of the content o	migratory sandpipers, plovers, and related species. [WBF]			3011 10
Fire Sinclates sill, day, still, sols hat make a ribbon longer than 2 cm when moistened, roled, squeezed, and extended between thumb and completed committees. Shallow Peak or organic 400 cmose; Coarse includes said, loany sand, gravel, cobble, sols that do not make a ribbon when moistened, roled, squeezed, and extended between thumb and forefrings. Diving any 2 consecutive weeks of the growing season, the extent of mutilitis, been unchaded sharulated areas not covered by thatch, and unchaded sharp with the standard and the said profit of the said foreign and the said f	Imigratory sandpipers, plovers, and related species. [WBF]	0	Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	
toefinger. Deep Peal to 40 cm dispit or greater. Shallow Peal or organic-40 cm deep. Oarse includes sand having any dispet cobbs, solk that do not make a ribbon when mostered, rolled, squeezed, and extended obteven thumb and forefinger. Fils Sharebird Feeding During any Consecutive weeks of the growing season, the extent of muddless, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is. [Include also any area that is adjacent to the AA.] None or 20 to 9s. m. 1001-1000 sq. m. 1001-1	Imigratory sandpipers, plovers, and related species, [WBF]	_	v v	
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between thumb and forefinger. Shorobeld Fielding Tabibates	I migratory sandpipers, plovers, and related species. [W8F]	0	Shallow Peat or organic <40 cm deep.	
For December Feeding During any 2 consecutive weeks of the growing season, the extent of munifilatis, bere unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 on the [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	I migratory sandpipers, plovers, and related species. [WBF]	0		
Habitals unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m. 1000-1000 sq. m. 1	,		0	Shoreh
Tool 1000 sq m Tool 10,000 sq m. Tool 10				
F16 Herbaceous % of Vegetated Wetland Negetated Wetland Negetated Wetland Negetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (invasive Plant Cover). O		1	None, or <100 sq. m.	
F16 Herbaceous % of Vegetated Wetland F17 Vegetated Wetland F18 Forb Cover F18 Sedge Cover Sedges Cover Sedge				
Helbaceous % of I vegetated Wetland Vegetated Wetland Vegetated part of the AA or <01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 57% of the vegetated part of the AA or <01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 57% of the vegetated part of the AA or <0.0 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 57% of the vegetated part of the AA or <0.0 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 57% of the vegetated part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the hertaceous part of the AA or soft of the A				
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Sedge Cover Sedge Cover Sedges (Carex spp.) and cottongrises (Eriophorum spp.) occupy:		1		
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Sedge Cover Sedge Cover Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:			Forb Cover Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:	Forb C
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Dominance of Most Abundant Herbaceous Species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aqualic plants). Then choose one of the following: Species Invasive Plant Cover Invasive Plant Cover Invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Invasive species are present in more than trace amounts, but comprise < 5% of herbaceous cover (or woody cover, if the invasives are				
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Species those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. 1 those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year. 1 those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year. 1 those species are in the species are present in the AA? For species, see Plants_invasive worksheet in the accompanying Supplind file. Invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). 1 invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	grammotus and torus. [EC, INV, PH, PUL, SERS]			
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Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). 0				
invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). 0				
invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). 6 6 7 1 Invasive Cover Along 7 8 Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant 8 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that it is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that it is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that it is occupied by invasive plant 1 a plant cannot be identified to species (e.g., winter conditions) but its given that it is occupied by invasive plant that it is occupied by invasive pl	e.g., winter conditions) but its genus contains an exotic	U		Invasiv
Upland Edge species, assume the unidentified plant to also be exolic. If vegetation is	also be exotic. If vegetation is so senesced that exotic			
none of the upland edge (invasives apparently absent), or AA has no upland edge. 1 species cannot be identified, answer "none". [PH, STR]		1		
some (but <5%) of the upland edge.			some (but <5%) of the upland edge.	
5-50% of the upland edge.				
most (>50%) of the upland edge. 6 pringe Wetland During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the 7 [WBF, WBN, WCv]				Eringo
Pringe wetland Using most of the year, open water winn or agazent to the vegetated part of the wetland is much woer than the maximum worn of the Using table 2 for within the wetland. Either 1" fill fills.				riinge
		0	Lacustrine Wetland The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	Lacusti
ILITATION TO STATE TO				

FieldF form - Non-tidal Page 2 of 5

F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	<u> </u>	0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, SBM, Sens, SR, WBN]
r 34		<1 m.	0	
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the second of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 2.75% of the water edge. 2.75% of the water edge. 3.75% of the water	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 50-75% of the water edge. 50-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
		drain the wetland artificially, or water is pumped out of the AA.	U	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		bumps into trendaceous vegeration and mostly spreads intrognour, or is in watery meanitiening, multi-maticited, or braided chainnels.	U	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.]	_	
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1". Neither of above	0	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mild-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
Er.c	0 1 1 2	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly – do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations abong streams during each writer. IAM CS EA EP INV NP OF PH DPV SES WIC WSI.
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		IAM FA FD INV ND, DIL DOL DD. CDM Core CD. CTD WDM
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
	D # 01	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	(ND DD C CD)
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	1
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years.	0	1
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	U	[PU, STR]
0,	Uses - Actual or			[0, 0.11 ₄
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickels. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or requiar quided interpretive tours.	0	-
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the trait.)		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
7/1	F	>95% of the AA with or without inhabited building nearby.	1	IAM DIL DIL COM CTD WDF WDNI
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	riica	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
		Waterfowl hunting.	0]
		Fishing.	0	1
		Trapping of furbearers.	0	
65	Domestic Wells	None of the above. The closest wells or water bodies that currently provide drinking water are:	1	[NRv]
UU	Domestic Wells			pusy
		Within 0-100 m. of the AA.	0	4
		100-500 m. away. >500 m. away, or no information.	0	
			1	(ALL DR)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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	Site Identifier: FC-Trib1-W-04	U	ate: 14 October 2019
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2	
Aberrant Timing of Water Inputs	Wollands: West As for New B	Turiowick: Voloion 2.	
,			
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			mutea (smaller of less frequent peaks spread over longer time:
Stormwater from impervious surfaces that drains directly to the wetle	and.	-	
Water subsidies from wastewater effluent, septic system leakage, so	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.		
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	ulates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	J ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of r	nachinery, livestock, fire, drainage, or off road vehicles.		
Straightening, ditching, dredging, and/or lining of tributary channels.			
If any items were checked above, then for each row of the table below To estimate effects, contrast the current condition with the condition is		no measurable effect on the timing of water conditions in any part of	f the AA, then leave the "O's" for the scores in the following rov
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within pass	, ,	, ,	, , , , , , , , , , , , , , , , , , ,
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
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In the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow storal myridefault asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belofollowing rows. To estimate effects, contrast the current condition with usual toxicity of most toxic contaminants: Frequency & duration of input: AA proximity to main sources (actual or potential): Accelerated Inputs of Nutrients In the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including failing septic systems). Fertilizers applied to lawns, ag lands, or other areas in the CA. Livestock, dogs. Artificial drainage of upslope lands. If any items were checked above, then for each row of the table below effects, contrast the current condition with the condition if the checked. Type of loading: Frequency & duration of input:	in either the wetland or its CA that is likely to have accelerated the parents of the condition of the checked items did not be in either the wetland or its CA that is likely to have accelerated the condition if the checked items never occurred or were no lor severe (3 points) Industrial effluent, mining waste, unmanaged landfill. Frequent and year-round. 0 - 15 m. In either the wetland or its CA that is likely to have accelerated the landfills. W. assign points. However, if you believe the checked items did not ditems never occurred or were no longer present. W. assign points. However, if you believe the checked items did not ditems never occurred or were no longer present. Severe (3 points) High density of unmaintained septic, some types of industrial sources. Frequent and year-round.	ot cumulatively expose the AA to significantly higher levels of containager present. Medium (2 points) Cropland, managed landfill, pipeline or transmission rights-of-way. Frequent but mostly seasonal. 15-100 m. or in groundwater. he inputs of nutrients to the welland. [NRv, PRv, STR] of cumulatively expose the AA to significantly more nutrients, then he moderate density septic, cropland, secondary wastewater treatment plant. Frequent but mostly seasonal.	ray in Google Earth. https://www.ec.gc.ca/inrp- Invinants and/or salts, then leave the "O's" for the scores in the Mild (1 point) Low density residential. Infrequent & during high runoff events mainly. In more distant part of contributing area. Sums Stressor subscores Wild (1 point) Livestock, pets, low density residential. Infrequent & during high runoff events mainly.

FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	lborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
	sessment Area		Stressor subscore=	0.00
soil or Sediment Alteration Within the Ass	sessment Area the welland that is likely to have compacted, eroded, or otherwise a	illered the welland's soil. Consider only items occurring within pa	Stressor subscore=	
soil or Sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	the wetland that is likely to have compacted, eroded, or otherwise a	illered the wetland's soil. Consider only llems occurring within pa	Stressor subscore=	
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soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	, , ,	Stressor subscore=	
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib1-W-04

Date: 14 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.194758, -66.20425

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

compated.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	6.76	Higher	0.42	Lower	6.93	0.50
Stream Flow Support (SFS)	2.08	Lower	3.65	Moderate	1.11	2.13
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	5.71	Higher	0.00	Lower	6.95	0.33
Nitrate Removal & Retention (NR)	3.01	Moderate	1.56	Lower	5.69	2.50
Carbon Sequestration (CS)	8.20	Higher			8.10	
Organic Nutrient Export (OE)	5.58	Higher			5.29	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	8.20	Higher	1.42	Moderate	6.76	2.01
Amphibian & Turtle Habitat (AM)	3.42	Moderate	1.74	Lower	5.11	3.15
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	8.37	Higher	2.50	Lower	6.94	2.50
Pollinator Habitat (POL)	9.50	Higher	10.00	Higher	7.65	10.00
Native Plant Habitat (PH)	9.82	Higher	10.00	Higher	7.04	10.00
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			2.24	Lower		2.87
Wetland Ecological Condition (EC)			8.55	Higher		9.17
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.08	Lower	0.42	Lower	6.93	0.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.50	Higher	1.10	Lower	7.80	1.76
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.09	Higher	2.67	Moderate	5.03	1.75
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	2.05	Lower	1.04	Lower	3.07	1.89
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.52	Higher	8.75	Higher	7.43	8.75
WETLAND CONDITION (EC)			8.55	Higher		9.17
WETLAND RISK (average of Sensitivity & Stressors)			1.23	Lower		2.61
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	ne wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name	Burchill Wind Energy Project - FC-Trib2-W-01
Investigator Name	Derrick Mitchell
Date of Field Assessment	14 October 2019
Nearest Town	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees)	45.193500
Longitude (decimal degrees)	-66.207134
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares)	1.0
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland	100
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired)	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

The State State The S	#	Indicators	Condition Choices	Data	Definitions/Explanations
And the desiration of the control of	F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
Here Solds Assert Manual Part Solds Assert Man			New Brunswick	1	
The contracted contracts The contract of surface was an elementary control and good of the good years and such first product on the As and Cy affects tests The control of the control o			Nova Scotia	0	spatial data exists in a particular province.
The control of the			Prince Edward Island	0	
Office and process of the common of the comm			Newfoundland-Labrador	0	
List of a treatment of the company o	2		The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
Edit Call Sections Edit 1 - The closes Edit 2 - The closes Edit 1 - The closes Edit 2 - The closes and closes			<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
11-1 Thorons 12-1 Thorons 13-1				0	
The Shederise Service of Differences				0	
The state of weather and surface and produced during most of the gening socion that is both (1) in or algored to the AM and C2 with a state of the s			1 to 10 hectares.	0	
Note of Waller 1 in 1 i			10 to 100 hectares.	0	
Section William Section Sectio			>100 hectares.	1	
1911 - 1 Federice 1 to Noncience 1 t	3			ì	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
1.1. Petrolises 10 to 10 blocketes 10 blocke			<0.01 hectare (about 10 m x 10 m).	0	
11. 1 February The Directories The Dir			· · · · · · · · · · · · · · · · · · ·	0	1
Use of Largest Restary from Control of Contr				0	1
Legislatic Tax of Combine Care of Large Management of CP. Des Courses Earth Principal special and contract that includes the AAN vegitation plan shadpecent spined vegetation had in not been, rise country. 20 In the large was presented in the contract that includes the AAN vegitation plan shadpecent spined vegetation had in not been, rise country. 20 In the large country of the Course of CP. Des Course of the Course of CP. Des Course of the Course of CP. Des Course of CP. De				0	1
Legislatic Tax of Combine Care of Large Management of CP. Des Courses Earth Principal special and contract that includes the AAN vegitation plan shadpecent spined vegetation had in not been, rise country. 20 In the large was presented in the contract that includes the AAN vegitation plan shadpecent spined vegetation had in not been, rise country. 20 In the large country of the Course of CP. Des Course of the Course of CP. Des Course of the Course of CP. Des Course of CP. De			10 to 100 hectares.	0	1
States to Large The blackers 1 - Includes 2 - Includes 3 - Includes			>100 hectares.	1	
Supplied Text The Complete Special of the Complete Special of the Complete Special Sp	1		The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sr
201 - 1 hotelans. 1 to 10 hotelans. 1 to 25 hotelans. 1 to 10 hote		Corridor	< 0.01 hectare (about 10 m x 10 m).	0	
10.1 - The clases 10 to 100 because. 10 to 100 because. 10 to 100 because. 10 to 100 because. 10				0	
To 10 hoctaines O				0	
To the Discharders Color Extract Color Extra				0	
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Solution to Large Vegetated Tract Solution to Large Vegetated Tract The minimum distance them bedget of the AR he field great feels seek registrated and but excluding row craps, bean, confirer solution, or improvisor surface, cut for AR held contains > 375 har of vegetation. To 50 m. and not separated form the 375 hardested or the 375 hardes				1	
The minimum distance from theodogr of the AR in the edge of the closest segentated four Quid excluding row crops, lawn, comfort plantation lawn part and 5 hockares (block). In on a solid), is considered for the closest segentated from the 375 has vegetated from th				0	
So m, and not separated from the 375-ha vegetation (and such sections of age to a section of completely separated from the 275-ha vegetation (This is often the answer in relatively undeveloped landscape as on a section of the secti	5	Distance to Large			To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
wom, or improvious surface. Or the AN best contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.] -50 m. but completely separated from the 375 ha wegetated area by those features, and AA does not contain >375 ha of vegetation. -50 5.5 m. but completely separated from the 375 ha wegetated area by those features50 5.5 m. and not separated50 5.5 m.		Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, but separated by those features. 9-500 m, and not separated. 9-500 m, and not separated m, and an experiment with the part of the separated. 9-500 m, and not separated m, and an experiment with the separated by the section by the separated by the section by th				1 s.]	
South Separated by those features 15.5 km, and not separated 15.5 km			<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
Distance by Road of Ward Cover Percentage Local Vegetated Cover Percentage Type of Land Cover Min the SA's wegetation for the content part of the Local Standard Cover Percentage Local Vegetation Cover is 5-10% woody but uplands within 15 km have <10% woody cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous but uplands within 16 km have <10% herbaceous cover. If so, enter "2" and continue to DFB. If not, consider: The AA's vegetation cover is 5-10% herbaceous will as grassifile plants in this use of herbaceous wegetation. Prover is 5-10% herbaceous will uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1" in Notice to was a structure of the AA's vegetation cover is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 5 km have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" in Notice woody cover. If so, enter "2" and continue to OFB. If not, consider: The AA's vegetation is 5-10% woody but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "2" and continue to OFB. If not, consider. The AA's vegetation is 5-10% woody but uplands within 100 m of the we			50-500 m, and not separated.	0	1
S - S km, but separated by those features 0			50-500 m, but separated by those features.	0	1
Need of the above (the closest patches or confidors which are that large are 5 km away). Hetbaceous Uniqueness The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '3' and continue to O'. If not, consider. The AA's vegetation core is -10% hetbaceous's but uplands within 1 km have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% hetbaceous's but uplands within 10m of the wetland edge have <10% hetbaceous cover. If so, enter '2' and continue to O'?. If not, consider. The AA's vegetation cover is -10% herbaceous's but uplands within 10m of the wetland edge have <10% herbacous vegetation. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 15 km have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland edge have <10% woody cover. If so, enter '2' and continue to OFB. If not, consider. The AA's vegetation cover is >10% woody' but uplands within 10m of the wetland ed			0.5 - 5 km, and not separated.	0	
Hetbaceaus Uriqueness The Af S vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so, enter "3" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 10 m of the wetland edge have < 10% herbaceous cover. If so, enter "2" and continue to 07. If not, consider: The Af S vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands. Include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" 1" NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands include moss as well as grasslike plants in this use of herbaceous vegetation? The Af S vegetation is > 10% woody' but uplands within 5 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "2" and continue to 0F8. If not, consider: The Af S vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" 1" NOTE: woody cover = trees a shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Local Vegetated Cover Percentage of the Af S to 20% of the land. 5 to 30% of the land. 5 to 3			0.5 - 5 km, but separated by those features.	0	
OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 1 km have < 10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% herbaceous' but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter "1" in AC's vegetation cover is > 10% woody' but uplands within 100 m of the wetland edge have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody' but uplands within 1 km have < 10% woody cover. If so, enter "1" in AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In AC's vegetation is > 10% woody cover. If see a shrubs taller than 1 m.] In Coole Vegetatied Cover Percentage The AC's vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is > 10% woody cover in see 3 shrubs taller than 1 m.] In Coole Vegetation is >			None of the above (the closest patches or corridors which are that large are >5 km away).	0	
consider: The AN's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AN's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land50 to 50% of the land50 to 50% of the land50 to 60% of the land50 within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Mithin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Measured along the maintained road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g., paved road, parking lob, building, exposed rock. Bare pervious surface, e.g.,	6	Herbaceous Uniqueness	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, I
The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Torau a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 10 cools of the land. 20 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 30 of 10 e90% of the land. 30 of 10 e90% of the land. 30 of the land. 40 of 10 e90% of the land. 40 of 10 e9	7	Woody Uniqueness		0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Local Vegetated Cover Percentage Percentage Percentage Percentage Percentage Procentage Percentage Procentage P			The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 50 to 90% of the land. 60 to 90% of the land. 70 to 60% of the land. 80 to 90% of the land. 10 to 90% of the land. 90% of the land. 10 to 90% of the land. 10			The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. 590% of the land. 590% of the land. 60 to 90% of the land. 590% of the land. 60 to 90% of the lan	8				In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
5 to 20% of the land. 20 to 60% of the land. 40 to 90% of the land. 590% of the land. 590% of the land. 590% of the land. 60 to 90% of the land. 590% of the land. 60 to 90% of the lan			S:		
20 to 60% of the land. 60 to 90% of the land. SKIP to OF10. Type of Land Cover Alteration Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confer plantalion. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 m			<5% of the land.	0	
60 to 90% of the land. 50% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Alteration Distance by Road to Nearest Population Center On Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: 100 m. 100 square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure here route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure here route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure here. Settlements (click on Place Names in menu) or other areas not close to mapped settlements in 1.5 km.					
- 590% of the land. SKIP to OF10. Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Distance by Road to Nearest Population Center Nearest Population Center 100 m. 100 - 500 m. 0.5 1 km. 1 - 5 km. 1 - 5 km.					
Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Nearest Population Center On the content of the c				0	
Alteration Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Nearrest Population Center Center 100 m. 100 - 500 m. 0.5 + 1 km. 1 - 5 km.				1	
Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (c5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Distance by Road to Nearest Population Center 100 m.	9		Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center Population cen		Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, the Hall, and daw and measure tender in 100 - 500 m. Output Output Distance by Road to Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: Population center means a settled area with more than about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited structure square kilometer. In Coogle Earth, click on the Ruler icon, then Plane about 5 regularly-inhabited square kilometer. In Coogle				0	1
Nearest Population Center 100 m. square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure rore from the control of the co	10	Distance by Road to			"Population center" means a settled area with more than about 5 regularly-inhabited structures r
Centler 100 m. 0 route. Or use the GeoNB's Draw & Measure loot Freehand Line to draw and measure the route 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlements of the meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1 - 5 km. 1			· · · · · · · · · · · · · · · · · · ·		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
0.5-1 km. 0 which meet the criteria [FAV, FRV, NRV, PH, PU, SBM, WBFv] 1-5 km. 1					route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
1 - 5 km.					Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
				0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
⊳5 km. 0				1	
			>5 km.	0	

	Distance to Nearest	C	1	Determine this hands the contribution of Court Forth and account the the Date Line to L.O.
OFII	Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		<10 m.	0	
		10 - 25 m.	0	
		25 - 50 m.	1	
		50 - 100 m.	0	
		100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. (AM, SBM, STR)
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water			wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
		<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	1	
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger	Ů	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		occurring and magazy in coogle cards. [cons, visi , visin]
		<100 m.	0	
		100 m - 1 km.	1	
		1-2 km.	0	
		2-5 km.	0	1
		5-10 km.	0	1
		>10 km.	0	1
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
	,	21.2		is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.		
		5-10 km.	0	
		10-40 km.	0	
0547		>40 km.	0	ND COM C
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water		
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA 25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	A 0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wellands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (WSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	s 0	
		Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there iso infrastructure vulnerable	0	
		to river flooding unrelated to tidal storm surges.		[FA, NR, Sens, SFSv, WCv, WSv]
OF18	Relative Elevation in	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	1	
	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Walersheds KMZ file that accompanies this calculator. Ther determine the AX-s approximate elevation (tottom right), NOT the "eye at!). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AX's elevation by the (max-min).	0.19	j. N., 100, 100, 100, 100, 100, 100, 100, 10
OF19	Watershed Water Quality Sensitive Watershed or Area	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.		If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF19 OF20	Watershed Water Quality Sensitive	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0- no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF19 OF20	Water Quality Sensitive Water Area Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA.	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
OF19 OF20	Water Quality Sensitive Water Area Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself.	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF19 OF20	Water Quality Sensitive Water Area Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA.	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF19 OF20	Water Shed Water Quality Sensitive Watershed or Area Degraded Water Upstream	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide ha AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0- no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF19 OF20 OF21	Water Shed Water Quality Sensitive Watershed or Area Degraded Water Upstream	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide ha AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0- no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0.19	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0- no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Dat are insufficient (no or inadeguate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel.	0.19 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel.	0.19 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water	determine the AA's approximate elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 – no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel.	0.19 0 0 0 0 0 1	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel.	0.19 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
OF19 OF20 OF21	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetr) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water perio	0.19 0 0 0 0 0 1	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF19 OF20 OF21	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and	0.19 0 0 0 0 0 1	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF19 OF20 OF21	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a c	0.19 0 0 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF19 OF20 OF21	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water perio	0.19 0 0 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF19 OF20 OF21	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AAs elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0- no. Sampling indicates a problem with concentrations ofmetals, Mydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The conditi	0.19 0 0 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20 OF21 OF22 OF22	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area (Catchment)	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with h	0.19 0 0 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20 OF21 OF22 OF22	Water Quality Sensitive Water Shed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area (Catchment)	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AAs elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0-no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and co	0.19 0 0 0 0 0 0 1 1 0 0 0 1 1 1 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this welland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this welland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
OF20 OF21 OF22 OF22	Water Quality Sensitive Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream Wetland as a % of Its Contributing Area (Catchment)	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetr) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a	0.19 0 0 0 0 0 0 0 0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this welland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this welland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]

		•		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) uoslope wetlands have been ditched extensively.		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
			1	
		Mostly untrue.	-	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
			0	
		Southward (S, SW), south-facing contributing area.	U	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inle
	(Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	1	
			-	
		50 - 100 m.	0	
		100 - 1000 m.	0	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
3.21	g Dogroo Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS
OFOR	Fish Assess U			1 1 1 1 1 1 1 1 1 1
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	l	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	I	aters.html [AM, FA, FR, INV, WBF, WBN]
			0	[AW, LA, LIN, HAV, WOF, WON]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic salmon or other anadromous species or eels and is probably accessed by those during some conditions.	U	
			_	-
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WBNv]
		presence of one or more of the prant species listed in the Plants_Kare worksheet of the accompanying Supplinto file, of the AA is within a mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, calledBAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
		IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31		•	0	This was provided by Dr. David Leske. [WBNv]
UF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNV]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change to blank .		
		230 (enter 3). It dutsitie of region shown in map, change toblank.		
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	I	
			I	
OE22	Other Concention	With CooND, click on Candidate DNA Man Viewer to identify Dravincially Significant Wetland, Environmentally Significant Association	Δ.	[DLI]
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
		Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar	1	
		Canada (NCC) for its exceptional ecological reatures or nignly infact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at agencies for more recent information.	l	
			<u> </u>	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tolars	I	
		u)		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	I	
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l -	['
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.	I	
0507			_	K CIC is a will be a support of the Budget Coal Coal Coal Coal Coal Coal Coal Coal
UF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	I	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change t oblank .	I	
			I	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
J1 30	отпотапр	information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	1	
		conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
			I	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

1	Pate: 14 October 2019	Site Identifier: FC-Trib2-W-01	Investigator:	Derrick Mi	tche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	Indicatan	Condition Challenge	Deta	Definitions In
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
A sh ncludi adja lescri	ould also include part of i le the open water part adj cent " is used synonymou ibed features along their u	The AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this daform, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	1	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if -95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if -5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, the percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetglale, alder, willow, birch, ash, dogwood, and a few others. I you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	3 1
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	0	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
ote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
1	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The flees and stituds need not be welland specie [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	0	
		coniferous, >40 cm diameter.	0	
		broad-leaved deciduous >40 cm diameter.	0	
		Follow the key below and mark the ONE row that best describes MOST of the AA:		[AM, INV, NR, PH, SBM, Sens]
6	Height Class Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each	0	
6		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
5		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		
i		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1	
		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely		
7	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B7 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	
7	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	
7	Interspersion Large Snags (Dead Standing Trees)	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, take, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 0	

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDINE INFINITY agae of Inciteris. [FA, FIX, INV, INV, OL, FTI, JDIN, JERS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pils, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruis, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
F13	Upland Inclusions	Several (extensive micro-topography). Within the AA inclusions of unland are:	0	[AM, NR, SBM]
1 13	opianu inclusions	Within the AA, inclusions of upland are:		pan, ms, semj
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	0	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m. 100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	1	
		50-95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
1 10	Scage Gover		^	[so]
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following:	0	
	Орошоз	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. Those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invacino Blant Cours	How extensive is the cover of invasive plant species in the AA? For species, see Plants, invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
120	Invasive Plant Cover	пом опольто в но вочен от птавто рынк эросков и институт то врешев, вее папквыте токкитеся и ите ассолиранущу Заррино file.		[20,11,102,0013]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 3-20 % of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:	-	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	1
		5-50% of the upland edge.	0	1
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
Enn	Lacuetrine Meller d	vegetated zone within the wetland. Enter "1" if true, "0" if false. The wegetated part of the AA is within or adjacent to a body of non-tidal standing open water where size exceeds 9 hostages during most of		TED DD DII WDE WDMI
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of a normal year.	0	[FR, PR, PU, WBF, WBN]
				1

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Personal States States As imministration As in the dark state contributed and the processing of the AAF or discrimination of	F24	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
200 of All All Section 2009 and the control of the					
2 77 of the Allows of the common segment and or 19th Allows is lated on perspective and of the Common segment and					
## 1906. AND the it is provided reach took face in the face of the Case of the					
Second			75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1	
Service Management Subsect The Company of the American Subsect Subsect The Company of the American Subsect The Company of the American Subsect Subsect The Company of the American Subsec			99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
Total of the AM 10 10 10 10 10 10 10 1	F25	Persistent Surface	of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
September Sept			None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
SWE A SIGNAL TO SWE				1	
Main Palls School					
Work Paul Is Standard Mark And Paul Process. Color of the color of builded Color of th	F0./			0	IFA NIO
2.7 N. of AR Bills Consensity The control in behand in behand 2.8 N. of AR Bills Consensity The control in behand in behand 2.9 N. of AR Bills Consensity The control in behand in					[FA, WC]
5-50% of the water is should. 2.1			·		
See SAA Data Land See See See See See See See See See S					
Excision Congress Exci					
Exception of the Content of the Co	507	00.000		1	
Sessionally Sessionally Sessional S	F27				I-lood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
20 Services of the AA. 20 Ser				0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
Security Water Commenced Proceedings Process Pro			20-50% of the AA.		
File Audition Ratings					
Proceedings Process	F28	Annual Water		U	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
Win - So of charge 15 - 1 m charge 15 - 1			•	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
Supe A place adjacent proded seeder smaller Part 017 hockers (about 10m x 10m x 10m m)? If so, enter "1" in column D and SKP TO F42 The A place adjacent proded seeder smaller Part 017 hockers (about 10m x 10m x 10m m)? If so, enter "1" in column D and SKP TO F42 The A place adjacent prode seeder smaller Part 017 hockers (about 10m x 10m x 10m m)? If so, enter "1" in column D and SKP TO F42 The A place adjacent production are adjacent program of the first when surface seater is present during the greatery and beautiful program of the first seater in an adjacent program of the first seater in a spatial mediant origin that occurs during most of the time, even if transdation is only see reporting the production are Surface and the first program of the first seater in a spatial mediant origin that occurs during most of the time, even if transdation is only see reporting the production are Surface and the first program of the first several measure in a place of the most popularity in the section of the most popularity. The section of the most popularity is the most popularity in the section of the first sect				1	PR, SR, WBN, WSJ
Like AA Just, adjacent proded seater smaller Pank DOT hectare (about 10m x 10m, or 1m x 100 mp? if so, enter "1" is column D and SKP TO F42 The Class Support of the seater smaller Pank DOT hectare (about 10m x 10m, or 1m x 100 mp? if so, enter "1" is column D and SKP TO F42 The Class Support of the seater smaller Pank DOT hectare (about 10m x 10m, or 1m x 100 mp? if so, enter "1" is column D and SKP TO F42 The Class Support of the seater smaller Pank DOT hectare (about 10m x 10m, or 1m x 100 mp? if so, enter "1" is column D and SKP TO F42 The Class Support of the SkP TO F42 The Class Support of the SkP TO F42 The Seater Support of the SkP TO F42 The Class Support of the SkP TO F42 The SkP TO SkP TO SkP TO F42 The SkP TO SkP TO SkP TO SkP TO F42 The SkP TO Sk					
Production Product P			-		
Class At Is and deep bit 30; 10 Sept motion (Sept and sept and se			water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
Compared to the compared of	F29				If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This guestion is asking about the
10 - 50 cm deop. 0		Ciass		1	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
12 m deep 2 m deep			10 - 50 cm deep.		temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
2 m deep True for amy fringe welfunds. One depth class sets— Veneroics of Toportions One depth class that comprises 59/9% of the AA's inundated area (size the classes in the question above). One depth class that comprises 59/9% of the AA's inundated area (size the classes in the question above). One depth class that comprises 59/9% of the AA's inundated area. Nather of above. There are 2 no more depth classes and none occupy 59/9%. Ponded (not Flowing) Ponded (no					well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
First Ponded (not Flowing) Fonded (not Flow			•		
Proportions One depth class hat comprises 5-90% of the AAS instunded area (use the classes in the question above). One depth class hat comprises 5-90% of the AAS instunded area. One depth class hat comprises 5-90% of the AAS instunded and is not county. 50%. Self-the county of the county of	F30		When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WRF, WRN]
Neither of above. There are 3 or more delight classes and none occupy >50%. During most times when surface water is proventing that is Cly ponded (stagrant, or flows so slowly that fine sediment is not heart of socrations of the susters. Soft of the water of accupies -100 sq. m curvulatively. Nearly all the surface water is flowing. SKIP to F34. 1					
Ponded (not Flowing) Abd in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: 45% of the water. 50% of the water. 70.95% of the water. 84% of Ponded Open Water in a crisial point of the growing season, the largest patch of open water that is open (lacking emergent vegetation during most of the growing season, and withdrich by a forest or shrub canopy) is: 84% of Ponded Water that is Open 75% of the And and largest point occupies -0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 75% of the ponded water. 70.95% of the ponded water. 100% of the ponde			·		
F32 Ponded Open Water hillinum Size F33 % of Ponded Water hill ducks eye aerial view, the percentage of the ponded water that is ponded and is in or bordering the AAI is >0.01 hectare (about 10 on the water is not obscured by vegetation in aerial ("duck's eye") view. It includes vege on the water is not obscured by vegetation in aerial ("duck's eye") view. It includes vege on the water surface or entirely submersed beneath it. F33 % of Ponded Water that is Open In ducks eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. 100% of the water edge. 100% of the ponded water. 100% of the ponded water.	F31				Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
30-70% of the water. 70-95% of the proded water. 70-95% of the water water within the AA's water level is lowest, the average width of vegetated area in the AA' that separates water					
F32 Ponded Open Water Minimum Size F33 More of the water. Minimum Size F34 More of Ponded Water that is Open More of Ponded Water The ponded water. More of Ponded Water The ponded water. More of the ponded water. More					
F32 Ponded Open Water - Minimum Size F33 More of Ponded Water that is Open Minimum Size F34 Width of Vegetated Zone within Wetland F35 Flat Shoreline Extent F36 During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mby 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, if false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). F37 Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vege on the water surface or entirely submersed beneath it. F38 Of Ponded Water that is Open And unfilledien by a forest or shrub canopy) is: And unfilledien by a forest or shrub canopy) is: And unfilledien by a forest or shrub canopy) is: And unfilledien by a forest or shrub canopy) is: And the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). F39 Only is of the ponded water. F30 Width of Vegetated Zone within Wetland F34 Width of Vegetated Zone within Wetland F35 Flat Shoreline Extent F36 Flat Shoreline Extent F37 Flat Shoreline Extent F38 During most of the part of the growing season, when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:					
F33 % of Ponded Water that is Open In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. 100% of the water water within the AA is: 1 m.			During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating
that is Open In this i		Millimani Oleo			
1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).					your, oo, i ar, inter, nee, oe, i er, oe, wolf, wolf, wolf,
F35 Flat Shoreline Extent 5.30% of the ponded water. 30-70% of the part of floating-leaved plants, i.e., aquatic bet include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR SM, Sens, SR, WBN] 5-30-70% of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 30-70% of the water edge.					
F34 Width of Vegetated Zone within Wetland To -9 m. To -9					1
F34 Width of Vegetated Zone within Wetland Zone Zone Zone Zone Zone Zone Zone Zone			30-70% of the ponded water.	0]
F34 Width of Vegetated Zone within Wetland At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA's: 1 m. 1 - 9 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. > 100 m. 100 m. 100			·		
Zone within Wetland adjining uplands from open water within the AA is: 1 m. 1 o m. 10 · 29 m. 30 · 49 m. 50 · 100 m. 50 · 100 m. > 100 m, open water is absent at that time. Filat Shoreline Extent Plats there is such as about 5% measured within 5 m landward of the water) is: 1 several solated pools are present in early summer, estimate the percent of their collect that has such a genile slope. [SR, WBN] If several solated pools are present in early summer, estimate the percent of their collect that has such a genile slope. [SR, WBN]	F34	Width of Vegetated		U	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
1 - 9 m.					include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
10 - 29 m. 0 30 - 49 m. 0 50 - 100 m. 0 > 100 m, or open water is absent at that time. 0 10 If several solated pools are present in early summer, estimate the percent of their collect slope less than about 5% measured within 5 m landward of the water) is: 10 With water edge. 0 1-25% of the					Son, Son, III, IIII
50 - 100 m. 0 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 2 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on, or open water is absent at that time. 0 on 1 on					1
> 100 m, or open water is absent at that time. 10 During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 11 Sw of the water edge. 12 Sw of the water edge. 12 Sw of the water edge. 13 O The water edge. 14 Sw of the water edge. 15 Sw of the water edge. 16 Sw of the water edge. 17 Sw of the water edge.					
Flat Shoreline Extent During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 1-25% of the water edge. 0 1-25% of the water edge.					1
1-25% of the water edge. 0	F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
			-		
			-		1
50-75% of the water edge. 0			50-75% of the water edge.	0	
>75% of the water edge. 1 The percentage of the proceeding of the proceeding of the proceeding of the proceeding of the percentage of the	E24	Dobust France		0	Emorgant variation is harbaconic plants where stone are neath above and mathematically
F36 Robust Emergents The percentage of the emergent vegetation cover in the AA that is cattail (Typha spp.), common reed (Phragmilles), or tall (>1m) bullush is: Emergent vegetation is herbaceous plants whose stems are partly above and partly be surface during most of the time water is present. [WBN]	F36	Robust Emergents	ince percentage or the entergent vegeration cover in the AA matis callalit (<i>Typha</i> spp.), continon feed (<i>Pritagnities</i>), Of fall (>TM) outrosh is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.]
1-25% of the emergent vegetation. 0 25-75% of the emergent vegetation. 0					1
			>75%, of the emergent vegetation.	0	1

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Paul, I.A., I.K., III49]
		Extensive.	0	Supra .
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	1	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	T-th-st ChI	is exponent note quoty man usual out or unlines on piese within the AA or commence on its course, or within 10 into the AA seage, which drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger	U	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
	,	permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	1	
		Bumps into neroaceous vegetation but mostly remains in rarry straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µSicm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Was not measured, but plants that indicate saline conditions cover much or the vegetated AAL criter 1. Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mild-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
		primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of 5-5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is > 5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.		
F52	Vegetated Buffer as %	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.	0	
		5 to 30%.	0	
		30 to 60%. 60 to 90%.	0	
		500 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		2012 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in buller			, , , , , , , , , , , , , , , , , , , ,
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	1	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
		that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	0	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	1	
		25-50%.	0	
		>50%.	0	
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	rotential	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	Onvision Coronica	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		, , , , , , , , , , , , , , , , , , , ,
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	0	1
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pels, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0]
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
,				(DLL DD)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying SuppInfo file for list of plant indicators	0	[PH, PR]

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gator: Derrick Mitchell	Site Identifier: FC-Trib2-W-01		Date: 14 October 2019					
essor (S) Data Form for Non-Tid	al Wetlands. WESP-AC for New B	runswick. Version 2.						
Aberrant Timing of Water Inputs								
In the last column, place a check mark next to any item that is lik	ely to have caused the timing of water inputs (but not necessarily their	r volume) to shift by hours, days, or weeks, becoming either more i	muted (smaller or less frequent peaks spread over longer time:					
more temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times). [FA, FR, INV, PH, STR]								
Stormwater from impervious surfaces that drains directly to the								
Water subsidies from wastewater effluent, septic system leakag								
Regular removal of surface or groundwater for irrigation or other	•							
	g water body, or other control structure at water entry points that regu							
	rom the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).						
Excavation within the wetland, e.g., dugout, artificial pond, dead	-end ditch.							
Artificial drains or ditches in or near the wetland.								
Accelerated downcutting or channelization of an adjacent or inte	ernal channel (incised below the historical water table level).							
Logging within the wetland.								
Subsidence or compaction of the wetland's substrate as a result								
Straightening, ditching, dredging, and/or lining of tributary chann								
	below, assign points. However, if you believe the checked items had n ion if the checked items never occurred or were no longer present.	no measurable ettect on the timing of water conditions in any part of	r tne AA, tnen leave the "U's" tor the scores in the following row					
Services and the current container must the contain	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.					
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.					
	past 10 years, and only for the part of the wetland that experiences th	, ,	10 100 jib ugo.					
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.					
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.					
			Sum=					
Sum								
Accelerated Inputs of Contaminants and/o	or Salts		Stressor subscore=					
In the last column, place a check mark next to any item occurri	ing in either the wetland or its CA that is likely to have accelerated th	ne inputs of contaminants or salts to the AA. [AM, FA, PH, POL, ST						
Accelerated Inputs of Contaminants and/o In the last column, place a check mark next to any item occurri Stormwater or wastewater effluent (including failing septic syste	ing in either the wetland or its CA that is likely to have accelerated th	he inputs of contaminants or salts to the AA. [AM, FA, PH, POL, ST						
In the last column, place a check mark next to any item occurri Stormwater or wastewater effluent (including failing septic syste	ing in either the wetland or its CA that is likely to have accelerated th		TR)					
In the last column, place a check mark next to any item occurring Stormwater or wastewater effluent (including failing septic system Metals & chemical wastes from mining, shooting ranges, snow s	ng in either the wetland or its CA that is likely to have accelerated thems), landfills, industrial facilities.		TR)					
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]					
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.								
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.								
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.							
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.							
Other human-related disturbances within the CA.								
If any items were checked above, then for each row of the table below, assign points (3, 2, or 1 as shown in header) in the last column. However, if you believe the checked items did not cumulatively add significantly more sediment or suspended solids to the AA, then leave the "Us" for the scores in the following rows. To estimate effects, contrast the current condition with the condition with the cendition if the checked items never occurred or were no longer present.								
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.					
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.					
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.					
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.					
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0				
soil or sediment.								
	sessment Area		Stressor subscore=	0.00				
soil or Sediment Alteration Within the Ass	sessment Area the welland that is likely to have compacted, eroded, or otherwise a	illered the welland's soil. Consider only items occurring within pa	Stressor subscore=					
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the che	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of th	ported from another wetland. Not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0"s" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.					
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table befiects, contrast the current condition with the condition if the checked specific contrast the current condition with the condition if the checked place is significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, especially during wetter. Intain bikes, especially du	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0"s" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.					

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib2-W-01

Date: 14 October 2019 Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.193500, -66.207134

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.64	Moderate	0.39	Lower	3.76	0.48
Stream Flow Support (SFS)	2.92	Lower	3.53	Moderate	1.56	2.06
Water Cooling (WC)	8.40	Higher	1.28	Lower	5.60	0.77
Sediment Retention & Stabilisation (SR)	2.00	Moderate	1.56	Lower	4.53	0.94
Phosphorus Retention (PR)	3.76	Moderate	1.09	Lower	5.57	1.32
Nitrate Removal & Retention (NR)	2.30	Moderate	4.56	Moderate	5.25	5.17
Carbon Sequestration (CS)	4.82	Moderate			6.64	
Organic Nutrient Export (OE)	6.31	Higher			5.68	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	7.93	Higher	5.26	Moderate	6.66	4.08
Amphibian & Turtle Habitat (AM)	4.85	Moderate	5.58	Moderate	5.86	5.48
Waterbird Feeding Habitat (WBF)	7.62	Higher	2.50	Moderate	6.07	2.50
Waterbird Nesting Habitat (WBN)	5.49	Higher	2.50	Moderate	4.69	2.50
Songbird, Raptor, & Mammal Habitat (SBM)	9.48	Higher	2.50	Lower	7.86	2.50
Pollinator Habitat (POL)	10.00	Higher	0.00	Lower	8.35	0.00
Native Plant Habitat (PH)	8.65	Higher	6.23	Moderate	6.57	5.40
Public Use & Recognition (PU)			2.23	Lower		1.92
Wetland Sensitivity (Sens)			0.08	Lower		2.23
Wetland Ecological Condition (EC)			7.59	Higher		8.61
Wetland Stressors (STR) (higher score means more stress)			3.14	Moderate		3.41
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.92	Moderate	0.39	Lower	3.76	0.48
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.23	Moderate	3.48	Lower	6.07	3.82
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	7.39	Higher	4.31	Moderate	5.77	3.19
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	5.61	Moderate	3.85	Moderate	4.69	3.79
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.69	Higher	4.57	Moderate	7.97	4.02
WETLAND CONDITION (EC)			7.59	Higher		8.61
WETLAND RISK (average of Sensitivity & Stressors)			1.61	Lower		2.82
	NOTE: A coor	a of 0 does not	moon the fune	tion or bonofit i	a abaant from t	ho wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MB-Trib2-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	11 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.172643
Longitude (decimal degrees):	-66.196268
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	9.8
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	40
What percent (approx.) of the wetland were you able to visit?	40
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the O (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html
GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island Newfoundland-Labrador	0	4
OF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	U	"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the area
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
OF3	Ponded Water &	>100 hectares. The area of wetlands and curface water pended during most of the growing season that is both (1) in as ediscont to the AA and (2) within	0	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
UF3	Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	0	the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare.	0	-
		0.0 i - 0. i nectare. 0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		>100 hectares.	- 1	
OF4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus all adjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare. 1 to 10 hectares	0	-
		1 to 10 nectares.	0	1
		100 to 1000 hectares.	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes.]	0	
OF5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		c50 m, and not separated from the 375-ha vegetated area by any width of paved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA liself contains >375 ha of vegetation, [This is often the answer in relatively undeveloped landscapes.]	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated. 0.5 - 5 km, but separated by those features.	0	-
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	-
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing
		OF7. If not, consider:		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be
		The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter *2* and continue to OF7. If not, consider:		drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PHv,
		The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1".		POLv, SBMv, WBFv, WBNv]
		[* NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		
OF7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter *2* and continue to OF8. If not, consider:		
		The AATs vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining area that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations)		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. JAM, PH, POL, SBM, Sens
		is:		
		<5% of the land.	0	
		5 to 20% of the land.	0	4
		20 to 60% of the land. 60 to 90% of the land.	0	4
		>90% of the land. SKIP to OF10.	1	
OF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	1
OF10	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearest population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Nearest Population	<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	< 100 m. 100 - 500 m.		route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
		100 - 500 m. 0.5- 1 km.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	1
		50 - 100 m.	1	
		100 - 500 m.	0	
OF12	Wildlife Access	>500 m. Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and
		separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change to blank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well. [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	1	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
OF14	Distance to Large	None of the above (the closest patches or corridors that large are >1 km away). The distance from the AA center to the closest (but separate) non-lidal body of water that is ponded during most of the year and is larger.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
01 14	Ponded Water	The usance from the Processes of the closest (our separate) normal body or water that is portion during frost of the year and is eigent than 8 hectares during most of a normal year is: <100 m.	0	Determine this by viewing aerial imagery in Google Latif. [Sells, WDF, WDF]
		100 m - 1 km.	0	1
		1 -2 km.	0	
		2.5 km.	1	
		5-10 km. >10 km.	0	-
OF15	Tidal Proximity	The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:	Ü	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
	,	<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m - 1 km.	1	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km. >40 km.	0	-
OF16	Upland Edge Contact	Select one:	0	[NR, SBM, Sens]
	. 5	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water.	0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	1	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wellands or water that is mostly wider than the AA. This will be true for most assessments done with WESP-AC.	0	
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal sform surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (WSV)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	mounty, (1004)
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable	0	
OF18	Relative Elevation in	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then		[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye ait"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.55	
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flow into the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region.	1	
	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. National States of the AA or inflowing water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters.	0	
0522	M-H	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region.		Towards and the state of Conde (Towards)
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AI may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding man, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result its:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1. 0.1 to 1.	0	
		 10.1 to 1. 11 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised. 	0	1
OF23	Unvegetated Surface in	bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots,		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	
		10 to 25%.	0	
		>25%.	0	

OF24 Tr				
	ransport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or (f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		(i) most CA soils are shallow (bedrock hear surface) and/or have high futfor coefficients. This statement is:		
		THIS SELECTION IS.		
		Mostly true.	0	
		Somewhat true.	0	
			0	
		Mostly untrue.		
OF25 As	spect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	1	
		, ,	-	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
	nternal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
(P	Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27 Gr	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	5 5 , .	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28 Fis	ish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have bee
O1 20 FE	ISH ACCESS OF USE	recording to agency analogists attain your own observations, the PM. [Width Just the IIIst Challe that is thue.].		regarding the last choice, if uncertain if an AA is itsniess, consider the possibility its waters have bee stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/StockedV
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		nttp://www.z.gnib.ca/content/gnibret/departments/erd/natural_resources/content/isi/content/stockedv aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	partition of the proof
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to have other fish at least seasonally.	0	
			0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).		
	pecies of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented [mark all applicable]:		Request information from ACCDC and/or conduct your own survey at an appropriate season using an
Co	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	-	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
			U	
		accompanying Supplnfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare worksheet	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
	mportant Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called IBAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
(IE	BA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31 Bl	lack Duck Nesting Area	in Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
	-	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change to blank .		
OF32 W	Vintoring Door or Moss-	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Vintering Deer or Moose Concentration Areas	If AA is on private land with no information, change to blank (not u). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	U	[20m]
C	oncentration At eas	accompanies and report called the _occurrence ingrees. Outerwise. Littlet, yes= 1, no= 0.		
OF33 Ot	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
De	esignation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC and		
		agencies for more recent information.		
OF34 Co	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change to blank (not	ľ	• •
		0)		
OE3E M	Aitigation Investment	The ΔΔ is all or part of a mitigation site used explicitly to offset impacts elsewhere. Δεk the property owner. Enter year 1 so 0. Here	n	
OF35 Mi	Mitigation Investment	Pr. The AA is all or part of a miligation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information change to hank	0	[PU]
	3,	Information, change to blank .		
	3,	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to		[PU]
	3,	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
	3,	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to		
OF36 Su	sustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank.		
OF36 Su	3,	Information, change to blank. Plants, animals, or water in the AA have been monitiored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at
OF36 Su	sustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter, yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 6), or slightly calcareous (enter 7), ons=0. Limestone is typically a major component (karst geology) and	0	[PU]
OF36 Su	sustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitiored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at
OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank.	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitiored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank.	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent information if available.	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitiored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent	0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
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OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or sightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited. Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltered conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	0 0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
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OF36 Su	ustained Scientific Use	Information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or sightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands Use more recent information if available. New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited. Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltered conditions. Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	0 0	[PU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,

Date: 11 October 2019 Site Identifier: MB-Trib2-W-01 Inves	nvestigator: D	errick Mito	che
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	tendin 1	Condition of 1		Definition for 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA shi nclude a dja d descrii	ould also include part of e the open water part ad cent " is used synonymo bed features along their	the AA should include all persistent waters in ponds smaller than 8 hectares (~283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, NV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	• • • • • • • • • • • • • • • • • • • •
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	
6	Hainht Clace	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter.	1	IAM INV ND DH SBM Sansi
6	Height Class Interspersion	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1 1 1 1 1	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA. A Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	1 1 1 1	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1 1 1 1 0	
7	Interspersion	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	1 1 1 1 0	
7	Interspersion Large Snags (Dead	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	1 1 1 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion Large Snags (Dead Standing Trees)	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA. A Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They sach. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA pus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	1 1 1 1 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 1 1 1 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar

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FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NYINKING BIGGE OF INCIDENS. [FA, FR, NAV, NAV, OE, FT, SDW, SENS]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA. 5.26% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	1
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions. Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	-
F12	Ground Irregularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pils,	U	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		integrate the Available and priving registration. Exclusing the potential or the Available and the Water, the fundation in Internal Policy and the Available		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
F12	Unland Industry	Several (extensive micro-topography). Mithin the AA inclusions of unland are:	0	[AM, NR, SBM]
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[ruvi, ivin, JOIVI]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Finest installed settled a settle fact that make a ribben langer than 2 am when maintained ralled sequenced, and extended between thumb and	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	U	
		Deep Peat, to 40 cm depth or greater.	1	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	1
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
F17	Forb Cover	>95% of the vegetated part of the AA. Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:	0	Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
	I dib covei		0	or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA. 5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	1
		50-95% of the herbaceous part of the AA.	0	1
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	1
F19	Dominance of Most	295% or the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	U	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
		aquatic plants). Then choose one of the following:		The second of th
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		woody).	_	-
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-30 % of the herb cover (or woody cover, if the invasives are woody).	0	1
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	0	-
		5-50% of the upland edge. most (>50%) of the upland edge.	0	1
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.	<u> </u>	
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.	I	1

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open			
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water	0	
F38	Persistent Deepwater	area. If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area	growing season, enter *1* and continue. If not, enter *0* and SKIP to F42.(Connection).		
F39	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwater wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none.	0	[AM, FA, FR, INV]
		Intermediate. Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on	0	[WBN]
		all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.		
F41	Floating Algae & Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined white visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/hoporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, Wcv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmell. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	and only only only maj
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	0	
		is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the As pills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further usologe. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above, [NRv, PH, PRv, SRv]
F45	Input Water	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface	0	[WCv]
	Temperature	water in the AA during part of most years. Enter 1= yes, 0= no.		
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
		Neither of above. Enter "1".	1	
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µSicm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
	Board Frobability	Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	U	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
. 01	incinai Grauletti	The gradient along most of the now pain within the AA is: Consider the AA has no surface water outlet (not even seasonally). Consider the AA has no surface water outlet (not even seasonally).	0	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	1	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
		hese questions are best answered by measuring from aerial images.		TAM EA ED INN ND, DU DOL DOL COM CORE CO. CTD MIDMI
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	_	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
	D # 01	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	(ND DD C CD)
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	1
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend a least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years.	0	1
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	U	[PU, STR]
0,	Uses - Actual or			[0, 0.11 ₄
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickels. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or requiar quided interpretive tours.	0	-
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the trait.)		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
7/1	F	>95% of the AA with or without inhabited building nearby.	1	IAM DIL DIL COM CTD WDF WDNI
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	riica	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
		Waterfowl hunting.	0]
		Fishing.	0	1
		Trapping of furbearers.	0	
65	Domestic Wells	None of the above. The closest wells or water bodies that currently provide drinking water are:	1	[NRv]
UU	Domestic Wells			pusy
		Within 0-100 m. of the AA.	0	4
		100-500 m. away. >500 m. away, or no information.	0	
			1	(ALL DR)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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	Site Identifier: MB-Trib2-W-01	D	ate: 11 October 2019				
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2					
	Wettands. WEST -AS for New B	Turiswick. Version 2.					
Aberrant Timing of Water Inputs							
In the last column, place a check mark next to any item that is likely i more temporal homogeneity of flow or water levels) or more flashy (l			nuted (smaller or less frequent peaks spread over longer times				
Stormwater from impervious surfaces that drains directly to the wetl							
Water subsidies from wastewater effluent, septic system leakage, s	now storage areas, or irrigation.						
Regular removal of surface or groundwater for irrigation or other con	nsumptive use.						
Flow regulation in tributaries or water level regulation in adjoining w	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.					
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	it of the AA (e.g., road fill, wellpads, pipelines).					
Excavation within the wetland, e.g., dugout, artificial pond, dead-end ditch.							
Artificial drains or ditches in or near the wetland.							
Accelerated downcutting or channelization of an adjacent or internal channel (incised below the historical water table level).							
Logging within the wetland.							
Subsidence or compaction of the wetland's substrate as a result of machinery, livestock, fire, drainage, or off road vehicles.							
Straightening, ditching, dredging, and/or lining of tributary channels.		no measurable offect on the timing of water conditions in any nart of	the AA then leave the "O's" for the scores in the following row				
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition.		to measurable effect on the tilling of water continuous in any part of	are two, area reave are 03 for the scores in the following for				
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.				
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.				
Score the following 2 rows only if the altered inputs began within pas			0.10.41				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.				
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.				
			Sum=				
•			Strassor subscara-				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item – occurring it Stormwater or wastewater effluent (including falling septic systems)	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	,				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring i	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	RI				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	RI				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring it Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1	n either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca	, , , , , , , , , , , , , , , , , , , ,	RI				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring it Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, o If any items were checked above, then for each row of the table belo	n either the welland or its CA that is likely to have accelerated to a landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. w. assign points. However, if you believe the checked items did no	tions from National Pollutant Release Inventory and view KMZ over	R/ lay in Google Earth. https://www.ec.gc.ca/inrp-				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any Item occurring it Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, o	n either the welland or its CA that is likely to have accelerated to a landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. w. assign points. However, if you believe the checked items did no the condition if the checked items never occurred or were no longer.	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- gger present.	R] lay in Google Earth. https://www.ec.gc.ca/inrp- lay in Google Earth. https://www.ec.gc.ca/inrp- lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "O's" for the scores in the				
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, o If any items were checked above, then for each row of the table belo following rows. To estimate effects, contrast the current condition with	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities. sge areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did in the condition if the checked items never occurred or were no lor Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over	lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salls, then leave the "OS" for the scores in the Mild (1 point)				
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FieldS form Non-tidal 1

	buting Area						
In the last column, place a check mark next to any item present in	in the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]				
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.	· · · · · · · · · · · · · · · · · · ·					
Erosion from construction, in-channel machinery in the CA.							
Erosion from off-road vehicles in the CA.							
Erosion from livestock or foot traffic in the CA.							
Stormwater or wastewater effluent.							
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.						
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.						
Other human-related disturbances within the CA.							
If any items were checked above, then for each row of the table below, assign points (3, 2, or 1 as shown in header) in the last column. However, if you believe the checked items did not cumulatively add significantly more sediment or suspended solids to the AA, then leave the "0's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.							
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.				
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.				
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.				
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.				
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	Sum=						
			Stressor subscore=	U.			
	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.0			
In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		U.I			
In the last column, place a check mark next to any item present lis less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mot	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		U.			
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BOR WL 15

Date: 11 October 2019 Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees):

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	9.04	Higher	1.30	Lower	8.68	1.38
Stream Flow Support (SFS)	1.04	Lower	0.00	Lower	0.56	0.00
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	5.13	Moderate	0.37	Lower	6.67	0.22
Phosphorus Retention (PR)	5.32	Higher	0.00	Lower	6.68	0.33
Nitrate Removal & Retention (NR)	10.00	Higher	1.00	Lower	10.00	2.00
Carbon Sequestration (CS)	6.98	Higher			7.57	
Organic Nutrient Export (OE)	6.11	Higher			5.57	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	8.29	Higher	0.99	Moderate	6.79	1.78
Amphibian & Turtle Habitat (AM)	3.09	Lower	1.08	Lower	4.93	2.75
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.93	Moderate	2.50	Lower	5.75	2.50
Pollinator Habitat (POL)	9.96	Higher	0.00	Lower	8.02	0.00
Native Plant Habitat (PH)	6.16	Higher	5.29	Moderate	5.57	4.59
Public Use & Recognition (PU)			2.26	Lower		1.94
Wetland Sensitivity (Sens)			1.94	Lower		2.78
Wetland Ecological Condition (EC)			8.55	Higher		9.17
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.04	Lower	1.30	Lower	8.68	1.38
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	8.41	Higher	0.73	Lower	8.86	1.43
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.08	Higher	0.66	Lower	5.01	1.19
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.85	Lower	0.65	Lower	2.96	1.65
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.82	Higher	3.94	Moderate	7.23	3.48
WETLAND CONDITION (EC)			8.55	Higher		9.17
WETLAND RISK (average of Sensitivity & Stressors)			1.08	Lower		2.56
	NOTE A				a abaant from t	

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name	Burchill Wind Energy Project - MCB-W-01
Investigator Name	Matt Alexander
Date of Field Assessment	9 October 2019
Nearest Town	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees)	45.162984
Longitude (decimal degrees)	66.195641
ls a map based on a formal on-site wetland delineation available	Yes
Approximate size of the Assessment Area (AA, in hectares)	3.90
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired)	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador (Carlotte Labrador Carlotte Labrador Carlott	0	
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar- from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	- 1	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
DF3	Ponded Water &	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) withi		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
JI 3	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare. 1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		10 to no nectares. >100 hectares.	0	1
DF4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,	ı .	See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Comuci	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares. 10 to 100 hectares.	0	
		10 to 100 hectares. 100 to 1000 hectares.	0	-
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
DF5	Distance to Large	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
	Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is: <50 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground,	1	GeonB. The 375-fla criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		awn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape <50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	4
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and no t separated. 0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	1
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous" but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing
		OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "INOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation".	-	aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffer of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PHv POLv, SBMv, WBFv, WBNv]
OF7	Woody Uniqueness	The AAT's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in fows. [AMv, PHv, POLv, SBMv]
		The A/S vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and conlinue to OF8. If not, consider: The A/S vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		Toron, Party, 1 10, 1 Oct., Sching
		[* NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	4
		5 to 20% of the land.	0	4
		20 to 60% of the land.	0	4
		60 to 90% of the land.	0	
DF9	Type of Land Cover	>90% of the land. SKIP to OF10. Militing the Expression and imported all normanon water, the land area that is bare or non percental cover is mostly.		[AM, SBM]
JI 7	Alteration	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		(run, John)
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	1
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
	Distance by Road to Nearest Population	Measured along the maintained road nearest the AA, the distance to the neares population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
OF10		<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
OF10			Toute. Of use the Ger	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
OF10	Center	100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
OF10		100 - 500 m. 0.5- 1 km.	0	
OF10				Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wellands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads whether under George LAND. STID STID.
OE12	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		hidden under forest canopy. [AM, SBM, STR] In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01 13	Water	The distance from the AV center to the closest points pointed water body visible an escoglectual minglery is. 450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as we [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	-
		2-5 km.	1	
		5-10 km.	0]
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		in Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	closer. If you need to see now far upriver a river is tidal, see the kinz life provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		10-40 km.	0	1
		>40 km.	0	1
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the A/		
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	-
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under in by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases leaves, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas; br no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable to river flooding unrelated to lidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	1	[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.29	
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shoul be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	, M, SM, SM, HBI , HBIIJ
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing.	0	1
		waters.	Ľ	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	1
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
OF22	Wetland as a % of Its	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	Topographic maps may be viewed online at the National Atlas of Canada (Topograma):
0F22	Wetland as a % of Its Contributing Area (Catchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or I using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:) }	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
OF22	Contributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result its: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	V	
OF22	Contributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. Trom a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	0	
	Contributing Area (Catchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: <0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 1.1 to 1. 1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 0 1 0 0	
	Contributing Area (Catchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which kA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 5.001 to 0.1. 5.1 to 1. 5.1 to 1. 6.2. wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog).	0 0 1 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

		•		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively.		
		(c) upsiope weitands have been ditched extensively, (d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	1	
			0	
		Mostly untrue.	0	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
			0	
		Southward (S, SW). south-facing contributing area.		
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inle
	(Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	9 = = 9,00 50,3	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OE30	Eich Accoss or Use	1 1 1 1 1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	l	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	I	alers.nuni [AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	1	pany regers, and a story
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		ls known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	0	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	_	
			0	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.		
		Presence of one or more of the nestingsongbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30		In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
	•	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change toblank.		
OFSS	Minterior De		_	ICDMI
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	I	
			I	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
		Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	I	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are	ı	
		agencies for more recent information.	I	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
5. 54	22. Jos vanosi nivestniciit	enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tblank (not	ľ	r = 1
		0).	l	
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
01 33	maganon mvestment	The AA is all of part of a miligation site used explicitly to oliset impacts eisewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank .	U	[i o]
055	0 11 10			(nu)
OF36		Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	I	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .	I	
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
	3	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	1	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.	I	
		. , , , , , , , , , , , , , , , , , , ,	I	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalten	1	
		conditions.	I	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	1
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
			ľ	
		Ourporthin is private and owner does not allow account or account post-in-in-thin-thin-thin-thin-thin-thin-th	_	1
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 9 October 2019 Site Identifier: MCB-W-01	Investigator: Matt Alexander
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to die	Condition of the	ъ.	Definition In 1 11
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog caraberry, pitcher plant, surdiew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	1	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bufrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
		he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The		
ncludi a dja d lescri	e the open water part adj cent " is used synonymo bed features along their i	the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should iacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, confusous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". (CS, NV, NR, PH, POL, SBM, Sens)
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	ueesisiiruus is 523% iiioss, tiieri quesitoit i Tiingrit de DT. [C3, IIVV, IVIV, FTI, FOE, 3500, 3eiis]
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater, SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
-		those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	
J	Woody Diameter Classes	India ALC the types had comprise 25% of the woody Carropy cover in the AA of 25% of the wooded aleas (it any) along its uplantil edge (perimeter). The edge should include only the frees whose canopies extend into the AA. conferous. 19 cm diameter and >1 m fall.	1	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
6		Tollow the key below and mark the one row that best describes worst of the Ave.		[Part, 1844, 1844, 171, John, John]
6	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.		
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		
6	Interspersion Large Snags (Dead	comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 in comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absence. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Interspersion	comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely-absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0	
7	Interspersion Large Snags (Dead Standing Trees)	comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter > 20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 0	at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely-absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE NATIONAL BASE OF INCIDENTS. [F.A., F.N., 1000, 1000, 1000, 3000, 3000, 3000]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F40	0 11 1 1	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	TI I I I I I I I I I I I I I I I I I I
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
		Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA).	1	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
F4.6		>10,000 sq. m.	0	CAM MOS MON
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
		45% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA. >95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
Ec.		>95% of the vegetated area.	0	
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file. Invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species appear to be absent in the AA, or are present only in trace amount (a rew individuals). Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant.	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
1	Upland Edge	Adong the welland-optiand boundary, the percent of the optiand edge (within 3 in opsidee from the welland) that is occupied by invasive plant species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
	3	vegetated zone within the wetland. Enter "1" if true, "0" if false.	L	
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23		a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest lime of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INM, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	1	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	1	.,,,
		0.5 - 1 m change. 1-2 m change.	0	-
		>2 m change.	0	1
Is the a		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	1	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	-
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	Proportions	One depth class that comprises 50-90% of the AA's inundated area.	0	
F31	% of Water That Is	Neither of above. There are 3 or more depth classes and none occupy >50%. During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	1	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
131	Ponded (not Flowing)	bolling into lines with some solitace water is present, the percentage rate is (1) pointed straight and, or nows so sowny that the sediments in held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: -5% of the water, or it occupies <100 s.g.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	WBF, WBN, WC, WS]
		5-30% of the water.	0	1
		30-70% of the water.	1	
		70.95% of the water. >95% of the water.	0	
F32	Ponded Open Water - Minimum Size	System of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water. 30-70% of the ponded water.	0	-
		70-99% of the ponded water.	0	
		100% of the ponded water.	0	
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is:		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
	Zone within Wetland	adjoining uplands from open water within the AATs: <1 m.	0	SBM, Sens, SR, WBN]
		1 - 9 m.	0	1
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	4
		> 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		if several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmilles</i>), or tall (>1m) bulrush		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
	, in the second	c. <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	,
		1-25% of the emergent vegetation.	0	
	·			

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open			
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water	0	
F38	Persistent Deepwater	area. If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area	growing season, enter *1* and continue. If not, enter *0* and SKIP to F42.(Connection).		
F39	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwater wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none.	0	[AM, FA, FR, INV]
		Intermediate. Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on	0	[WBN]
		all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.		
F41	Floating Algae & Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined white visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/hoporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmell. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	int, OL, FR, 3013, 31K, 31K, W3J
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the Aspills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upsigoe, if no, SKIP to F47 (bH Measurement).	1	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface	0	[WCv]
	Temperature	water in the AA during part of most years. Enter 1= yes, 0= no.		
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	Ü	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	1	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
		Neither of above. Enter *1*.	1	
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
		TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	1	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	•	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	0	
F50	Groundwater Strength	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		>10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	- 1	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	. ypo or oover at ballor			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	1	
		5-30%. >30%.	0	
55	Cliffs or Steep Banks	in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cillis of Steep Bariks	In the zero within 1 to m, there are executed tentation retained south as class, didus suppes, stream usins, or executeur pins (our not pinply) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	O	DO NOT INCLUDE uprunited wees as potential delt sites. [FOL, Sum]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	-
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded vistoin last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	1
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%. 25-50%.	0	
		>50%.	0	-
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or		1	
	Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.		
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	1
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]	1	[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64. 5-50%.	0	
		50·95%.	0	1
		>95% of the AA.	0	1
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	
		Waterfowl hunting.	0	_
		Fishing.	0	1
		Trapping of furbearers.	0	
40	D	None of the above. The elegant walls or water hading that surrouth provide disking water are:	1	MDd
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	
- 4.4	Colograpus F	>500 m. away, or no information. The AA is as in part of a calcacause for See the Dients Colcar worksheet in the accompanying Supplies file for list of plant indicators.	1	[DL DD]
66	Calcareous Fen	The AAIs, or is part of, a calcareous fen. See the Plants, Calcar worksheel in the accompanying Supplinto file for list of plant indicators (calciphiles). Enter 1 if more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to identify those and no information, change to blank.	0	[PH, PR]

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essor (S) Data Form for Non-Tidal		D.	ate: 9 October 2019
cosor (o) Buta i offili for Noti-fidal	Wetlands WESP-AC for New B	runswick Version 2	
Aborrent Timing of Mater Innuts	Wettarius: WEST-ACTOT NEW B	Turiswick. Version 2.	
Aberrant Timing of Water Inputs			
In the last column, place a check mark next to any item that is likely a more temporal homogeneity of flow or water levels) or more flashy (l.			nuted (smaller or less frequent peaks spread over longer times
Stormwater from impervious surfaces that drains directly to the wetl			
Water subsidies from wastewater effluent, septic system leakage, s	snow storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other con	insumptive use.		
Flow regulation in tributaries or water level regulation in adjoining w	rater body, or other control structure at water entry points that regu	ulates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	at of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-en-	d ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or interna	ıl channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of			
Straightening, ditching, dredging, and/or lining of tributary channels.			
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		no measurable effect on the timing of water conditions in any part of	tine AA, then leave the "US" for the scores in the following row
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within pas	st 10 years, and only for the part of the wetland that experiences the	nose.	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
		T-	Sum=
			Stressor subscore=
npri/default.asp?lang=En&n=B85A1846-1	-5 ()	lions from National Politiant Release Inventory and view Kiviz over	lay in Google Earth, https://www.ec.gc.ca/inrp-
npriraciaali.asp:lang=Enan=Bos/11040 1		lions from National Politicant Release Inventory and view KMZ over	lay in Google Earth. https://www.ec.gc.ca/inrp-
Road salt.		ilons from National Politilant Release Inventory and view KMZ over	lay in Google Earth. https://www.ec.gc.ca/inrp-
	or other areas in the CA.	uons from Nauonai Poliulani Release inveniory and view KMZ ovei	lay in Google Earth. https://www.ec.gc.ca/inrp-
Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, o If any items were checked above, then for each row of the table belo	ow, assign points. However, if you believe the checked items did n	ot cumulatively expose the AA to significantly higher levels of conta	
Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, o	ow, assign points. However, if you believe the checked items did no tith the condition if the checked items never occurred or were no lor	ot cumulatively expose the AA to significantly higher levels of conta gger present.	minants and/or salts, then leave the "O's" for the scores in the
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			1
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last columnate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	3
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	3
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	1
* high intensity- extensive off road vehicle use plowing grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	9
soil or sediment.		, , , , , , , , , , , , , , , , , , , ,	Juli-	
			Stressor subscore=	0.75
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a		Stressor subscore=	
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table befiects, contrast the current condition with the condition if the checked specific contrast the current condition with the condition if the checked place is significant soil alteration in wetland: Duration:	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a Intain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the periods in the properties of the position of the position of the properties of the plants in the p	ported from another wetland. ported from another wetland. ported from another wetland. Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since welland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of welland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.75

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MCB-W-01 Date: 9 October 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.162984N 66.195641W

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.36	Lower	1.91	Lower	3.54	1.98
Stream Flow Support (SFS)	7.19	Higher	6.47	Higher	3.83	3.77
Water Cooling (WC)	3.29	Moderate	8.76	Higher	2.19	5.27
Sediment Retention & Stabilisation (SR)	2.09	Moderate	7.31	Moderate	4.59	4.44
Phosphorus Retention (PR)	3.02	Moderate	6.08	Higher	5.05	5.83
Nitrate Removal & Retention (NR)	2.23	Lower	10.00	Higher	5.20	10.00
Carbon Sequestration (CS)	5.75	Higher			7.04	
Organic Nutrient Export (OE)	5.03	Moderate			5.00	
Anadromous Fish Habitat (FA)	6.97	Higher	2.65	Moderate	4.27	1.96
Resident Fish Habitat (FR)	6.81	Higher	2.62	Moderate	4.06	1.86
Aquatic Invertebrate Habitat (INV)	4.91	Moderate	7.36	Higher	5.60	5.21
Amphibian & Turtle Habitat (AM)	6.20	Moderate	5.81	Moderate	6.58	5.61
Waterbird Feeding Habitat (WBF)	6.64	Moderate	5.00	Moderate	5.28	5.00
Waterbird Nesting Habitat (WBN)	5.30	Moderate	5.00	Moderate	4.53	5.00
Songbird, Raptor, & Mammal Habitat (SBM)	7.91	Higher	5.00	Moderate	6.56	5.00
Pollinator Habitat (POL)	10.00	Higher	0.00	Lower	8.18	0.00
Native Plant Habitat (PH)	6.63	Higher	5.66	Moderate	5.76	4.91
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			0.50	Lower		2.35
Wetland Ecological Condition (EC)			5.66	Moderate		7.50
Wetland Stressors (STR) (higher score means more stress)			2.62	Moderate		3.22
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	7.19	Higher	1.91	Lower	3.54	1.98
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	2.73	Lower	8.90	Higher	6.26	8.38
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.15	Higher	8.15	Higher	4.88	5.01
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	6.68	Higher	5.01	Moderate	5.76	4.75
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.09	Higher	4.61	Moderate	7.51	4.15
WETLAND CONDITION (EC)			5.66	Moderate		7.50
WETLAND RISK (average of Sensitivity & Stressors)			1.56	Lower		2.79
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	ne wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MC-Trib1B-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	11 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	
Longitude (decimal degrees):	-66.187355
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.5
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	10
What percent (approx.) of the wetland were you able to visit?	10
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-apps/apps-e-asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spanial data oxists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) with 1 km is:	0 n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include or the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
	Welland Willin T Kin.	<u> </u>	0	are part within 1 km. 1 onded means not nowing in the cis of streams. (Sens, WB) j
		<0.01 hectare (about 10 m x 10 m).	0	-
		0.01 - 0.1 hectare.	0	-
		0.1 - 1 hectare. 1 to 10 hectares.	0	-
		10 to 100 hectares.	0	-
		>100 hectares.	1	
1	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	- 1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sen:
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, streiches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscap.	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is > 10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to 0F7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to 0F7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous cover.	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estilianting the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
		"herbaceous vegetation"]		
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	0	
	Woody Uniqueness Local Vegetated Cover Percentage	The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"	ea	rows. [AMv, PHv, POLv, SBMv]
	Local Vegetated Cover	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and the content of the remaining are shown to the content of the remaining and the content of the remaining are shown to the content of the content of the remaining are shown to the content of the conten	ea	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
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7 8	Local Vegelated Cover Percentage	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: <p>-5% of the land. 5 to 20% of the land. 50 to 60% of the land. 60 to 90% of the land.</p>	0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
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8	Local Vegetated Cover Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. -50% of the land. Within the 5-km radius circle, and ignorting all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 0 0 0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Local Vegetated Cover Percentage Type of Land Cover Alteration Distance by Road to	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5 km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confler plantations is: -5% of the land. 5to 20% of the land. 20 to 60% of the land. 500 to 90% of the land. 500 to 90% of the land. 500 to 90% of the land. 500 which is and SKIP to OF10. Within the 5-km radius circle, and ignorting all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g. paved road, parking lot, building, exposed rock. Measured along the maintained road nearest the AA, the distance to the nearespopulation center is: -100 m.	0 0 0 0 1	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler Icon, then Path, and draw and measure the route. Or use the GooRNB's Draw & Measure tools Freehand Line to draw and measure the route.
9	Local Vegetated Cover Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 30 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perential cover is mostly: Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m.	0 0 0 0 0 1	rows. [AMV, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly-inhabited structures square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route.
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OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. C
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 · 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	1
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
0514	Distance to I see	None of the above (the closest patches or corridors that large are >1 km away).	0	Determine this housing is a social impact of County Forth (County MIDE)
UF 14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	1
		1 -2 km.	0	
		2-5 km.	1	
		5-10 km. >10 km.	0	1
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:	Ů	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m - 1 km.	1	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km.	0	1
OF16	Upland Edge Contact	Select one:	Ů	[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non- tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the meni under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
	tidai Walci S	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases	0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		evees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	o river flooding unrelated to lidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AXS approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's		[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AM's elevation by the (max-min). In Google Earth, open the KMZ file NB, Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.60	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Watershed or Area Degraded Water	Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
20	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:	0	be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	1
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	1
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmett) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AI may be only a part. The adjust hose boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	Y	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporamalen/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0]
		0.1 to 1.	1	1
		>1 (welland is larger than its catchment (e.g., welland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog).	0	
OF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about: nrsc.	1	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
OF23			1	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]

		-		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(a) land cover is mostly non-iorest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		THE SHARING IS		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OFOE	A 1			[AM ND CEC MC MC]
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	1
		Southward (S, SW), south-facing contributing area.	- 1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
0120	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	3.7	<10 m.	0	,
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	1
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL GrowingDegreeDays. Place your cursor over the AA	Ť	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
JI ZI	Growing begree bays	and left-click. From the RMZ life that accompanies this calculator, called MB-PET_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS
OFan	Fish Assess U			
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	Ī	http://www.z.gnb.ca/conten/gnb/en/departments/erd/hatural_resources/conten/htsn/content/stocked/ aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	Ī	[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	1
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	1
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
01 27	Concern	within the past to years, in the AA (or in its adjoining waters of wetland), qualified observers have documentequitary all applicable].		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	Concern			WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	1
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change toblank.		
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
JI 32	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	U	[JOIN]
	Soliconiation Arcas	becompanies and report cance the becamming recast out this. Little, yes - 1, 110- 0.	I	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	l	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are	l	
		agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change the lank (not	Ī	
		u)	<u></u>	
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	<u></u>	
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	I	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t oblank .	Ī	
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
0.0,	odidaroods region	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	ľ	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change t olank .	Ī	,g
			Ī	
0500	O	Colored to ONE and the second to the AA Is Corole 5. II. 1997 Co. III. 1997 Co.		*Potential Indiana in the Indiana in
OF 38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere	1	
		conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
			<u> </u>	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	
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Date: 11 October 2019 Site Identifier: MC-Trib1B-W-01 Inv	nvestigator: Derrick Mitche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog caraberry, pilchre plant, sudew, bor cribtis). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	1	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
1A sh	ould also include part of	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should facent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form,		
tescn	ibed features along their i	usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Moreilla), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the threes/shrubs is <25% moss, then question F1 might be "B1". (CS, NV, NR, PH, POL, SBM, Sens)
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	3	incoming and the second
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	4	
<u>Vote</u> :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for the
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		uroad-leaved deciduous 1-9 cm diameter and > 1 m tail. coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	0	
,	Heisel Class	broad-leaved deciduous >40 cm diameter.	0	TAMA INIV NID DIL COM Coord
0	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
		B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation failer than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
		B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely		
7	Large Snags (Dead	B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		
7	Large Snags (Dead Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.		
7	Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.		

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INVINING AIGAE OF INCIDENS. [F.A., F.K., INV., INV., O.E., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F12	Ground Irregularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pils,	0	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
1 12	Ground megulatily	raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		The deposition may be a maintain an additional plant, Ed. 111, 111, 111, 111, 111, 111, 111, 11
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
F12	Unland Indusis	Several (extensive micro-topography). Mithin the AA inclusions of unland are:	0	[AM, NR, SBM]
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[ми, ик, эрии]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Soil Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[,,,,],]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Finest installed settled a site fact make a ribben langer than 2 am when maintained ralled sequenced and extended between thumb and	1	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	1	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
E17	F-+ 0	>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F19	Dominance of Most	>95% of the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
1 19		Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		i or and question, include terms as well as graffillious and folios. [EU, 1199, PH, PUL, SERS]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover. (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant.	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	· ·	none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	
Egg	Eringo Wattand	most (>50%) of the upland edge.	0	TAMPE WITH WOOD
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	[WBF, WBN, WCv]
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		· · · · · · · · · · · · · · · · · · ·
			-	

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:	1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]	
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	1	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA. 20-50% of the AA.	0	
		50-95% of the AA.	0	
F0/		>95% of the AA. True for many fringe wetlands.	0	Es MO
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F07	00.000	>75% of the water is shaded.	1	
F27	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA. or <1% but >0.01 ha.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA. >95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	U	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	1	PR, SK, WBN, WSJ
		0.5 - 1 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	1	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water. >95% of the water.	0	
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	орон	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0	
		5-30% of the ponded water. 30-70% of the ponded water.	0	1
		70-99% of the ponded water.	0	
F34	Width of Vagatated	100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	0	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
. 54	Width of Vegetated Zone within Wetland	At the time during the growing season when the AA's: adjoining uplands from open water within the AA's:		include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
		<1 m.	0	SBM, Sens, SR, WBN]
		1 - 9 m. 10 - 29 m.	0	1
		30 - 49 m.	0	
		50 - 100 m. > 100 m. or open water is absent at that time.	0	
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	Ü	If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	
		1-25% of the water edge. 25-50% of the water edge.	0	
		25-50% of the water edge. 50-75% of the water edge.	0	
		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation. 25-75% of the emergent vegetation.	0	
		>75%, of the emergent vegetation.	0	
		. G. Caranter		

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open			
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water	0	
F38	Persistent Deepwater	area. If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection).		
F39	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwater wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	n O	[WBN]
F41	Floating Algae & Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilitch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult lopographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/loporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" dilch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	MK, OL, FR, Sells, SK, STK, WSJ
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	1	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	1	[WCv]
	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
		incoming water). Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		bumps into nerbaceous vegeration and mostly spreads unoughout, or is in widely meandering, multi-branched, or brance diffamels.	U	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.]		or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
		TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µSlcm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater welland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	1	
EEO	Croundwater C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	0	Adhere to those critician strictly, do not we reconstitutionant!
	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly – do not use personal judgment based on fen conditions, pH, or other evidence. Consult tographic maps to delect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early writer. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA AND the pH of surface water, if known, is >5.5.	, 0	
001		Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note fo	r the next three questi	>10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
adjacer	t. In many situations, th	ese questions are best answered by measuring from aerial images.		TAM EA ED INV NDs DL DOL DD. CDM Core CD. CTD WDM
	of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	1
		60 to 90%.	0]
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	1	

FieldF form - Non-tidal Page 4 of 5

	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or cover at Banci	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	1	
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	1	Do not include upturned trees as potential den sites. [POL, SBM]
		that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
56	New or Expanded	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C
	Wetland	previously was none (e.g., by excavation, impoundment):		NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown.	0	-
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:	-	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR
	,	Burned within past 5 years.	0	1
		Burned within past 3 years. Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	1
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25-50%.	0	
		>50%.	0	
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	Otential	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via		
		contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	1
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: /Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
00	Univisited Core Area	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		[AW, FAV, FRV, FN, FU, SDW, STR, WDF, WDN]
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the		
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
(1	Comment Affects of	>95% of the AA with or without inhabited building nearby.	1	IAM DIL DIL COM CTD WIDE WIDNI
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	Alea	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	1
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets,	0	[AM, PU, WBF, WBN]
	Protection	and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance		
64	Concumptive Hear	of wildlife (except during hunting seasons). Enter "1" if true. Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
U4	Consumptive Uses (Provisioning Services)			[[AV, [AV, WOFV]
		Low-impact commercial timber harvest (e.g., selective thinning).	0	4
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	4
		Waterfowl hunting. Fishing.	0	-
		Trapping of furbearers.	0	1
		None of the above.	1	1
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
			•	1
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to identify those and no information, change to blank.		

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pator: Derrick Mitchell	Site Identifier: MC-Trib1B-W-01	D	ate: 11 October 2019	
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2		D
Aberrant Timing of Water Inputs	Wollands: West As for Now B	Turiowick. Voloion 2.		
In the last column, place a check mark next to any item that is likely more temporal homogeneity of flow or water levels) or more flashy (l			nuted (smaller or less frequent peaks spread over longer time:	
Stormwater from impervious surfaces that drains directly to the wet	and.			
Water subsidies from wastewater effluent, septic system leakage, s	now storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or other co	nsumptive use.			
Flow regulation in tributaries or water level regulation in adjoining w	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.		
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, dead-en	d ditch.			
Artificial drains or ditches in or near the wetland.				L
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).			
Logging within the wetland.	machinery livestack fire drainers or off read vehicles			H
Subsidence or compaction of the wetland's substrate as a result of Straightening, ditching, dredging, and/or lining of tributary channels	*			-
If any items were checked above, then for each row of the table belo		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row	c
To estimate effects, contrast the current condition with the condition		to measurable eneet on the timing of water continions in any part of	are full, their leave the 03 for the secres in the following for	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	L
Score the following 2 rows only if the altered inputs began within pas			919.41	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	-
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
			Sum=	
-			Strassar subscara-	
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring to Stormwater or wastewater effluent (including failing septic systems)	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	,	
In the last column, place a check mark next to any item occurring i	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	RJ	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	in the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.	· · · · · · · · · · · · · · · · · · ·		
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
			Stressor subscore=	U.
	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.0
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In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause arctificial water level or flow manipulations sufficient to cause erro. If any items were checked above, then for each row of the table to the sufficient sufficient to cause erro.	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a possible property of the periods of the plants is a plants. The plants is a plants in the property of the property of the property of the plants is a plants in the plants is a plants. The plants is a plant is a plant is a plant is a plant in the plants in the plants is a plant in the plants is a plant in the plants in the pl	ported from another wetland. not measurably alter the soil structure and/or topography, then lea	st 100 years or since wetland was created or restored (whichever	0.0
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In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause arctificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants of the property of the pro	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.0
In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error in the sufficient of the condition of the table the effects, contrast the current condition with the condition if the check spatial extent of altered soil: Recentness of significant soil alteration in wetland:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a compacted periods. The plants is graphic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. The plants is a compact point in the checked items did to the checked items never occurred or were no longer present. The plants is a compact present in the checked items and the checked items never occurred or were no longer present. The plants is a compact present in the checked items and the checked items never occurred or were no longer present. The plants is a compact present in the checked items and the checked items never occurred or were no longer present. The plants is a compact present in the checked items and the checked items and the checked items and the checked items are compacted in the checked items and the checked items are checked items are checked items are checked items and the checked items are checked ite	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.0
In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the checked above. Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods. In organic amendments (compost, etc.) or small amounts of topsoil importance and the properties of the p	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-Trib1B-W-01

Date: 11 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.195228, -66.187355

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	1.29	Lower	1.43	Lower	2.72	1.50
Stream Flow Support (SFS)	6.67	Higher	6.94	Higher	3.56	4.04
Water Cooling (WC)	7.80	Higher	5.73	Higher	5.20	3.45
Sediment Retention & Stabilisation (SR)	1.30	Lower	6.16	Moderate	4.05	3.74
Phosphorus Retention (PR)	2.94	Moderate	5.53	Higher	4.98	5.33
Nitrate Removal & Retention (NR)	0.98	Lower	10.00	Higher	4.44	10.00
Carbon Sequestration (CS)	3.31	Moderate			5.99	
Organic Nutrient Export (OE)	8.43	Higher			6.81	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	6.77	Higher	4.63	Moderate	6.26	3.74
Amphibian & Turtle Habitat (AM)	4.89	Moderate	4.74	Moderate	5.88	4.97
Waterbird Feeding Habitat (WBF)	5.81	Moderate	2.50	Moderate	4.62	2.50
Waterbird Nesting Habitat (WBN)	4.86	Moderate	2.50	Moderate	4.15	2.50
Songbird, Raptor, & Mammal Habitat (SBM)	9.39	Higher	2.50	Lower	7.79	2.50
Pollinator Habitat (POL)	10.00	Higher	0.00	Lower	8.19	0.00
Native Plant Habitat (PH)	8.15	Higher	6.14	Moderate	6.37	5.33
Public Use & Recognition (PU)			2.26	Lower		1.94
Wetland Sensitivity (Sens)			4.00	Moderate		3.40
Wetland Ecological Condition (EC)			7.11	Higher		8.33
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	6.67	Higher	1.43	Lower	2.72	1.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	2.34	Lower	8.62	Higher	5.43	8.18
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	7.92	Higher	6.35	Higher	6.13	3.89
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	4.46	Moderate	3.35	Moderate	4.41	3.48
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.59	Higher	4.51	Moderate	7.82	3.97
WETLAND CONDITION (EC)			7.11	Higher		8.33
WETLAND RISK (average of Sensitivity & Stressors)			2.11	Lower		2.87
	NOTE: A soor	a of 0 does not	mean the func	tion or honofit i	e abcent from t	he wetland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MC-Trib1C-W-03
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	9 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.1904
Longitude (decimal degrees):	-66.184379
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	5
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	5
What percent (approx.) of the wetland were you able to visit?	5
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which r spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu
		1 to 10 hectares.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	Stom in Gilling Reliands dyers. [17] Golff, North
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		>100 hectares.	1	
1	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
	rogotatou rrust	50 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA liself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	1	George The Ground Children and Tally model 1 George Fam, 11, 1 GL, 50m, 50m.
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50 500 m, and not concrated	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous" but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view
		OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buf of 5 km. 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.]		
		[NOTE, Woody Cover - trees & stitutes taller trial i in.]		
8	Local Vegetated Cover Percentage	Triving the ready to the release stream than the property of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land.	0	
В		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, see 5% of the land. 5 to 20% of the land.	0	
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land.	0 0	
8		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, see 5% of the land. 5 to 20% of the land.	0	
	Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 50 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0 0	
		Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations; s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 00 to 90% of the land. 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0	of an appropriate land cover layer: [AM, PH, POL, SBM, Sens]
	Percentage Type of Land Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 5-5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
9	Percentage Type of Land Cover Alteration	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is c5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
9	Percentage Type of Land Cover Alteration Distance by Road to	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations; 5-5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p
9	Percentage Type of Land Cover Alteration	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is c5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations, s. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations; 5: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. 60% of the	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures psquare kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route.
79	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations; s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 500 to 90% of the land. 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dif or gravel road, cropland, landside, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: -100 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route. Settlements (Citic on Place Names in menu) or other areas not close to mapped settlements but

	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road hidden under forest canopy. (AM, SBM, STR)
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01 13	Water	**S0 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as we [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	1
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m. 100 m - 1 km.	0	-
		1-2 km.	0	-
		2-5 km.	1	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichev is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	closer. If you need to see now far upriver a river is tidal, see the kinz life provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		5-10 km. 10-40 km.	0	-
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	г. О	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA		
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under in by clicking on the arrow to its len and the shoet to its right. Oricheck the first (Limits of Data box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas jor no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable	1	
OF18	Relative Elevation in	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	1	[FA, NR, Sens, SFSv, WCv, WSv]
OF10	Water Quality Sensitive	determine the AAs approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.55	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Watershed or Area Degraded Water	Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	Ů	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		
		The condition is present within the AA. The condition is present within the AA. The condition is present in water within 1 km that flowing to the AA but has not been decurrented in the AA itself.	0	be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
			_	
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0	
	Degraded Water	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
	Degraded Water Downstream	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0	PRV, SRV, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0 0 0	PRV, SRV, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0 0	PRV, SRV, STR, WBF, WBN]
OF21	Downstream	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetalands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0 0 0 0 0 0 1	PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this welland assessment. [NRv, PRv, SRv]
OF21		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is	0 0 1 1 0 0	PRV, SRV, STR, WBF, WBN]
	Downstream Wetland as a % of Its Contributing Area	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The action of the condition is present within 5 km downslope and connected to the AA by a channel. The action of the bound of the AA by a channel of the bound of the condition is present within 1 km but not connected to the AA by a channel. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which is a procedure secsoribed in the Manual. Divide the area of the wetland find just the AA) by the approximate area of its catchment excluding the area of the wetland is this. 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0 0 0 1 1 0 0 0 1 1 hbb/	PRV, SRV, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF21	Downstream Wetland as a % of Its Contributing Area	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland (not just the AA) by the approximate area of its catchment accounts. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 0.01 to 0.1. co.1.	0 0 1 1 0 0 0	PRV, SRV, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF21	Downstream Wetland as a % of Its Contributing Area	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The action of the condition is present within 5 km downslope and connected to the AA by a channel. The action of the bound of the AA by a channel of the bound of the condition is present within 1 km but not connected to the AA by a channel. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which is a procedure secsoribed in the Manual. Divide the area of the wetland find just the AA) by the approximate area of its catchment excluding the area of the wetland is this. 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0 0 0 1 1 0 0 0 1 1 hbb/	PRV, SRV, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF22	Downstream Wetland as a % of Its Contributing Area	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetalands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01 to 0.1. O.1 to 1. -1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bod).	0 0 0 1 1 0 0 0 1 1 0 0 0 0 1 1 0 0 0 0	PRV, SRV, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF21	Downstream Wetland as a % of its Contributing Area (Catchment)	The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. From a lopographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland fine and the wetland its catchment (CA) of the entire wetland in the wetland area. The result is: 4.0.1 to 0.1. 1.1 to 1.1 to 1. 1.2 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain	0 0 0 1 0 0 0 0	May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		This section is.		
		Mostly true.	0	
		Somewhat true.	1	
		Mostly untrue.	0	
OFAE	A	-	0	[AM ND CEC MC MC]
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	1
		Southward (S, SW), south-facing contributing area.	0	1
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	1	
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
0120	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	,	<10 m.	0	,
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	1
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	Ť	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
JI ZI	Growing Degree DayS	and left-click. From the kmz lile that accompanies this calculator, called MB-PET_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS
OFOR	Fish Assess U	1.1.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked/
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		http://wwwz.gnb.ca/content/gnb/en/departments/erd/hatural_resources/content/itsn/content/stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	1
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havother fish at least seasonally.	0	1
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:	_	Request information from ACCDC and/or conduct your own survey at an appropriate season using a
01 27	Concern	within the past to years, in the AA (or in its adjoining waters or wetland), qualified observers have documentequitary all applicable].		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	Concern			WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	1
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
	· ·	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change to blank .		
OF22	Wintering Deer or Moose	If AA is an arisate land with no information, change to blank (not 0). If an public/group land, in Cocale Earth open the VM7 file that	0	[SBM]
OF32	Wintering Deer or Moose Concentration Areas	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	U	[MIGE]
	Concontiation Arcas	becompanies and report called tra_becattilited ingrices. cities wise. cities, yes- 1, 110- 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are		
		agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tblank (not		
		U)		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t cblank .		
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
01 37	Calcaleous Region	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change t oblank .		
		d 3 3		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere		
		conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
			L	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0]

Da	te: 9 October 2019	Site Identifier: MC-Trib1C-W-03	Investigator:	Derrick Mi	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to all and	Condition of the		Definition / C. L. V.
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA shi nclude a dja d descrii	ould also include part of e the open water part ad cent " is used synonymo bed features along their	The AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should lacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this dat form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, r similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if -95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if -45%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, a bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is ~25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	• • • • • • • • • • • • • • • • • • • •
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
			1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.		
6	Hoight Class	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.		IAM INV ND DL CDM Cope
6	Height Class Interspersion	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	1 0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	1 0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1 0 1 0	
7	Interspersion	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	1 0 1 0	
7	Interspersion Large Snags (Dead	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the welland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>80 chectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion Large Snags (Dead Standing Trees)	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The rumber of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	1 1 0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the welland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>80 chectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1 1 0 1 0 0	Snags are dead slanding trees that often (not always) lack bark and foliage. Include only ones that ar

FieldF form - Non-tidal Page 1 of 5

ΕO	Al Fivoro	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	N Fixers	is:		DO NOT INCIDIDE INVINING AIGAS OF INCIDENTS. [F.A, F.N., INV., INV., O.E., F.N., SEIN, SEINS]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
F10	Haland I. J.	Several (extensive micro-topography).	0	TAM ND CDM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Son Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[66], 111, 62,7 11,7 11, 6613, 67 67, 116]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	_	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		,
		None, or <100 sq. m.	0	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegelated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F19	Dominance of Most	>95% of the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
1 17		aquatic plants). Then choose one of the following:		e or with governor, include forms as well as gramminas and forus. [E.G., 1199, P.H., P.CL, SEIIS]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		invasive species are present in more man trace amounts, but comprise <5% or neroaceous cover (or woody cover, it the invasives are woody).	Ű	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F04	lavantus O	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along Upland Edge	Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	opiana Euge	none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	1
		5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	[WBF, WBN, WCv]
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
. 20	Eddustrino Wetland	a normal year.	1	p

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F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of		0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		
r 34		<1 m.	0	SBM, Sens, SR, WBN]
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the percentage of the emergent vegetation, or emergent vegetation is absent. SKIP to F38. 1-29 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. <1.25% of the water edge. <25-50% of the water edge. <25-50% of the water edge. <25-75% of the water edge. <27-5% of the water edge. <28-5% of the water edge. <28-5	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 50-75% of the water edge. 50-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Floating Algae & Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	0	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	U	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[wc ₄]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.]	_	
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1". Neither of above	0	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
TEO.	Croundyt C'	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult logorgaphic maps to detect breaks in Jospe described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE4	Internal Condition	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charoline along the the about the state of
F51	Internal Gradient	The gradient along most of the flow path within the AA is: <8 or the AA has no surface water outlet (not even seasonally).	0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% of the AA has no surface water outlet (not even seasonally). 2-5%.	1	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
	nt. In many situations, the Vegetated Buffer as %	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.	0	
		5 to 30%.	0	
		30 to 60%. 60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		a company of the comp		i.

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er Slope s or Steep Banks	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE): Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: 47% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%. 5.30%. 5.30%. 3.30%. in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, inpoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3.20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 11:30 years ago. Burned 3.0 years ago. Burned 3.0 years ago. Burned 3.0 years ago. Burned 3.0 years ago. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25.50%. Assuming access permission was granted, select ALL statements that are true of the AA as it currently ex	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	[NRv, PRv, Sens, SRv] Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR] [PU, STR, WBFv]
er Slope s or Steep Banks v or Expanded land n History -consumptive - Actual or	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: <1% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%. 5.30%. >30%. >30%. >30%. >10 m the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, and created or expanded within 120 years or not. More than 1% of the AA's previously vegetated area: Burned 11-30 years ago. Burned 4-10 years ago. Burned 4-10 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%. 25%.	1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded land in History -consumptive - Actual or	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: -11% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%. 3-30%. 3-30%. 3-30%. 1 the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 4-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	1 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded land in History -consumptive - Actual or	percent slope of: <1% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. <25%. 5-30%. 5-30%. 5-30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within last 3 years or not. More than 1% of the AA's previously vegetated area: Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	1 0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or Expanded land in History -consumptive - Actual or	2-5%. 5-30%. 5-30%. 5-30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 2-55%.	1 0 0 0 0 0 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded land In History Dillity -consumptive S - Actual or	5-30%. 5-30%. 5-30%. 1n the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255%.	0 0 0 0 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded land In History Dillity -consumptive S - Actual or	30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 4-10 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%	0 0 0 1 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded land In History Dillity -consumptive S - Actual or	in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 11% of the AA's previously vegetated area: Burned 4-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	0 1 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded land In History Dillity -consumptive S - Actual or	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, inpoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3:20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within ast 3 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6:10 years ago. Burned 11:30 years ago. Burned 11:30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	1 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
n History -consumptive	previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3:20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6:10 years ago. Burned 11:30 years ago. Burned 11:30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	0 0 0 0 0 0	NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR
-consumptive s - Actual or	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-130 years ago. Burned 1-130 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 0	
-consumptive s - Actual or	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-130 years ago. Burned 1-130 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 0 0 0	
-consumptive s - Actual or	Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	0 0 0 0 0 0 0	
-consumptive s - Actual or	Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 3-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 1	
-consumptive s - Actual or	Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 1	
-consumptive s - Actual or	More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. >50%.	0 0 0 1	
-consumptive s - Actual or	Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 3-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	0 0 1 1	
-consumptive s - Actual or	Burned 6-10 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 550%.	0 0 1 1	[PU, STR, WBFv]
-consumptive s - Actual or	Burned 11-30 years ago. Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255%. 25-50%.	1	[PU, STR, WBFv]
-consumptive s - Actual or	Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: -25%. 25-50%.	1	[PU, STR, WBFv]
-consumptive s - Actual or	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.		[PU, STR, WBFv]
-consumptive s - Actual or	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25.50%.		[רט, אוא, שפרע]
s - Actual or	25·50%. >50%.		
s - Actual or	>50%.	0	
s - Actual or			
s - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	0	TOLL AND T
			[PU, STR]
	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
	contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
isited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
	- <5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	1
	5-50% and no inhabited building is within 100 m of the AA.	0	1
	5-50% and inhabited building is within 100 m of the AA.	0	1
	50-95%, with or without inhabited building nearby.	0	
	>95% of the AA with or without inhabited building nearby.	1	
quently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
•	<5% If F60 was answered ">95%" (mostly never visited). SKIP to F64.	1	
	5-50%.	0	1
	50-95%.	0	1
	>95% of the AA.	0	1
P - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
P - Wildlife ection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
sumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
visioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0	1
	Fishing.	0	1
	Trapping of furbearers.	0	1
	None of the above.	1	
nestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
	Within 0-100 m. of the AA.	0	1
	100-500 m. away.	0	1
	>500 m. away, or no information.	1	1
	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators (calciphilles). Enter 1 lf more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	0	[PH, PR]
e c	Soils Wildlife tition Implive Uses sioning Services)	above	above

FieldF form - Non-tidal Page 5 of 5

	Site Identifier: MC-Trib1C-W-03	U	ate: 9 October 2019					
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2						
	Wetlands. WEST-ACTOLINEW B	Turiswick. Version 2.						
Aberrant Timing of Water Inputs								
In the last column, place a check mark next to any item that is likely more temporal homogeneity of flow or water levels) or more flashy (nuted (smaller or less frequent peaks spread over longer times					
Stormwater from impervious surfaces that drains directly to the wetland.								
Water subsidies from wastewater effluent, septic system leakage, snow storage areas, or irrigation.								
Regular removal of surface or groundwater for irrigation or other consumptive use.								
Flow regulation in tributaries or water level regulation in adjoining w	rater body, or other control structure at water entry points that regu	alates inflow to the wetland.						
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	it of the AA (e.g., road fill, wellpads, pipelines).						
Excavation within the wetland, e.g., dugout, artificial pond, dead-en	d ditch.							
Artificial drains or ditches in or near the wetland.								
Accelerated downcutting or channelization of an adjacent or interna	al channel (incised below the historical water table level).							
Logging within the wetland.								
Subsidence or compaction of the wetland's substrate as a result of	•							
Straightening, ditching, dredging, and/or lining of tributary channels		ble offers the state of make a state of the	She AA sheet leave the "OL" for the second in the following second					
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		io measurable effect on the liming of water conditions in any part of	the AA, then leave the "US" for the scores in the following rol					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.					
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.					
Score the following 2 rows only if the altered inputs began within pa	st 10 years, and only for the part of the wetland that experiences the	oose.						
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.					
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.					
			Sum=					
			and the second s					
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring. Stormwater or wastewater effluent (including failing septic systems	in either the wetland or its CA that is likely to have accelerated to), landfills, industrial facilities.							
In the last column, place a check mark next to any item occurring: Stormwater or wastewater effluent (including failing septic systems	in either the wetland or its CA that is likely to have accelerated to), landfills, industrial facilities.	the inputs of contaminants or salts to the AA. [AM, FA, PH, POL, ST tions from National Pollutant Release Inventory and view KMZ over	RI					
In the last column, place a check mark next to any item occurring. Stormwater or wastewater effluent (including failing septic systems, Metals & chemical wastes from mining, shooting ranges, snow stor	in either the wetland or its CA that is likely to have accelerated to), landfills, industrial facilities.		RI					
In the last column, place a check mark next to any item occurring Stormwater or wastewater effluent (including failing septic systems Metals & chemical wastes from mining, shooting ranges, snow stor npri/default.asp?lang=En&n=B85A1846-1	in either the wetland or its CA that is likely to have accelerated to), landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca		RI					
In the last column, place a check mark next to any item — occurring Stormwater or wastewater effluent (including failling septic systems Metals & chemical wastes from mining, shootling ranges, snow stor npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, of If any items were checked above, then for each row of the table belief.	in either the wetland or its CA that is likely to have accelerated to), landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. ow, assign points. However, if you believe the checked items did no	tions from National Pollutant Release Inventory and view KMZ over	R/ lay in Google Earth. https://www.ec.gc.ca/inrp-					
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present is	in the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]					
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.							
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.				1				
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.							
Accelerated channel downcutting or headcutting of tributaries de	ue to altered land use.							
Other human-related disturbances within the CA.								
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0				
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	0				
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	0				
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	0				
high-intensity= extensive off-road vehicle use, plowing, grading, excavation, erosion with or without veg removal; low-intensity= veg removal only with little or no apparent erosion or disturbance of soil or sediment.								
Sail an Cadimannt Altanation Within the As			Stressor subscore=	0.00				
is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	ollered the wetland's soil. Consider only items occurring within pa		0.00				
In the last column, place a check mark next to any item present it	in the wetland that is likely to have compacted, eroded, or otherwise a	ollered the wetland's soil. Consider only items occurring within pa		0.00				
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-Trib1C-W-03

Date: 9 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees):

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	8.39	Higher	4.45	Moderate	8.18	4.50
Stream Flow Support (SFS)	1.20	Lower	0.00	Lower	0.64	0.00
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	3.32	Moderate	1.83	Lower	5.43	1.11
Phosphorus Retention (PR)	4.41	Higher	1.63	Lower	6.03	1.81
Nitrate Removal & Retention (NR)	10.00	Higher	3.63	Moderate	10.00	4.33
Carbon Sequestration (CS)	4.51	Moderate			6.51	
Organic Nutrient Export (OE)	5.80	Higher			5.41	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	3.16	Moderate	0.91	Moderate	4.99	1.73
Amphibian & Turtle Habitat (AM)	2.81	Lower	2.39	Moderate	4.78	3.54
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.79	Moderate	5.00	Moderate	5.63	5.00
Pollinator Habitat (POL)	9.20	Higher	0.00	Lower	7.41	0.00
Native Plant Habitat (PH)	4.68	Moderate	5.01	Moderate	4.97	4.35
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			1.83	Lower		2.75
Wetland Ecological Condition (EC)			3.25	Moderate		6.11
Wetland Stressors (STR) (higher score means more stress)			6.76	Higher		4.74
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.20	Lower	4.45	Moderate	8.18	4.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	7.95	Higher	2.99	Lower	8.50	3.38
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.17	Moderate	0.61	Lower	4.08	1.16
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.68	Lower	1.43	Lower	2.87	2.13
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.05	Higher	4.17	Moderate	6.71	4.06
WETLAND CONDITION (EC)			3.25	Moderate		6.11
WETLAND RISK (average of Sensitivity & Stressors)			4.29	Moderate		3.75

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name	Burchill Wind Energy Project - MC-Trib1C-W-04
Investigator Name	Matt Alexander
Date of Field Assessment	8 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees)	45.189587
Longitude (decimal degrees)	66.183085
ls a map based on a formal on-site wetland delineation available	Yes
Approximate size of the Assessment Area (AA, in hectares)	0.94
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired)	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-apps/apps-e-asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	Spatial data UNIST II a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roat >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu
		0.1 - 1 hectare.	1	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
	Ponded Water & Wetland Within 1 km.	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within the miss.	0 n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include or the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
	Weddid Willin Fkin.	<u> </u>	0	are part within 1 km. 1 orded means not nowing in rivers of streams. [Sens, West]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare. 1 to 10 hectares.	0	
		10 to 100 hectares.	1	
		>100 hectares.	0	
4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,	· ·	See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		c50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped to the contains of the con	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
,		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation".		For this question only, consider moss to be herbaceous vegetation. Determine the score by viewlearlail imagery in Google Earth filer successively davning or estimating the boundaries of the buff of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can i drawn in Google Earth Pro by clicking on the Ruler Icon, then Circle in the pop-up menu. [AMv., P. PDLv., SBMv, WBFv, WBNv]
	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted i
1		consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
./				
-1		consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover Percentage	consider: The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
	Percentage	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the welland edge have <10% woody cover. If so, enter "1" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an		
	Percentage	consider: The AAS vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is:		
	Percentage	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [*NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: 5% of the land. 5 to 20% of the land. 20 to 60% of the land.	0	
	Percentage	consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & strubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT fawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 6 to 90% of the land.	0	
	Percentage	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [*NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: 5% of the land. 5 to 20% of the land. 20 to 60% of the land.	0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover	consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & strubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT fawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 6 to 90% of the land.	0 0	
8	Percentage	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 500 within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 590% of the land.	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover Alteration	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" The AA's vegetation is >10% woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining and that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 5 to 20% of the land. 50 to 90% of the land. 50 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	consider: The AAT's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter '1' ["NOTE: woody cover = frees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is: 5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures pe square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
8	Percentage Type of Land Cover Alteration Distance by Road to	consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 50% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. 60 to 90% of the land. 50% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures persurar kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route.
8	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, coniler plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m. 100 - 500 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route Settlements (citic on Place Names in menu) or other areas not close to mapped settlements but
8	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confier plantations is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 50% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. 60 to 90% of the land. 50% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	[AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures pe square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GooNB's Draw & Measure tools Freehand Line to draw and measure the route.

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 · 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), Jawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wet [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (tull separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	1
		1 -2 km.	0	1
		2.5 km.	1	
		5-10 km. >10 km.	0	-
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:	U	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve
	,	<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m · 1 km.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
		10-40 km.	0	4
OF16	Upland Edge Contact	Select one:	U	[NR, SBM, Sens]
	- 1 · · · · · · · · · · · · · · · · · ·	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	brown in by clicking on the arrow to its election the state to its right. Oricheck the insign clinics of balay box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but linfrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case: levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas ip rin such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.	-	
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding uncleated to lidat sorm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	'	[FA, NR, Sens, SFSv, WCv, WSv]
0510	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.56	
OF 19	Water Quality Sensitive Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing.	0	-
		waters.	L	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream) This is the situation for nearly all wetlands in this region.	1]
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	,, , , , , , , , , , , , , , , , ,
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	flowing 0	
		moters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:) }	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/foporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	1
		0.1 to 1.	1	
OE22	Unwaredated Curface In	1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). 1. The proposition of the AA's contribution area (proposition to proposition of the AA's contributions area (proposition to proposition of the AA's contributions area (proposition to proposition to the AA's contributions area (proposition to the AA's contributions).	0	ICA IMV NDv DDv SDv STD WCv WSvI
UFZ3	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landstides, and other mostly-bare surface is about: <10%.	1	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		10 to 25%.	0]
		>25%.	0	1

Comparison of the present	OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
So you also has been engined. The source of the second of			indicated by the following: (a) input channel is present		
Section of the control of the cont			(b) input channels have been straightened,		
1					
Bind CAS be available ploated, test and racing what the high and contributes 1					
Rely In the Comment of the Comment o			(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
Somewhat traits. Compared to the contraction of			This statement is:		
Second Proceedings of the control from securities which is a second process subsection of many subsections of many subsectio			Mostly true.	0	
See a control for deviction of most under some risk in season, seek or an experiment plant with the seek of the season of the se			Somewhat true.	0	
Section (No. 1997) And security of the section of t			Mostly untrue.	1	
Some Service	OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
The EST No. Will be proposed as a process of the company of the co				0	
Section of Concession Proceedings Proceedings Procession Pro			11 7 0	0	
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Common Service Comm					
Public P				1	
Section Description Section Communication Section Sect				0	
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Second and Proceedings of Secondary (1997) Seco	OF27	Growing Degree Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	
Property of page of control graphing control specified sequency of Adards among other productions of Specific Control (1997)	OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been chosen up NP, the list of sheeked waters in at
Append A of the Manual. Control call of the place special case in the "Inspiration combination combina				0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
Security of the contained and separated and separated processes and proceedings concentration to make years and proceedings of the contained Alland's plant species and proceedings of the contained and procedings of the contained and proc					aters.html
summor other anatomous openiors or do and is protechly and consecuted by manufactories of Sproached by the control				0	[AM, FA, FR, INV, WBF, WBN]
Species of Conservative Within the past 10 years, in the AR (or in 5 adjoining waters or welland), qualified discoveres have documented privated and applicable approached from the Concentration of				U	
Section of Conservation White the part of by years in the Adj or this adjoining waters or welfund), qualified decreases have documented and applicability Experience of one or more of the plant species listed in the Plants, Pare worksheet of the Prosecut of one or more of the interpolation or repulles species (MM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the melanguagesplant or repute species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the configuration of the recting secure (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the excent of the subject will be the concernance of the subject will be a concernance of the subject will be the concernance of the subject will be the process of the subject will be the process of the subject will be the s				0	
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Presence of one or more of the plant species lolled in the Plants, Rare worksheet of the accompanying Supplints (iii. or the AAI is within a purple Allenitic Cossal Plant Fivra Buffer Presence of one or more of the amphiphian or regitile species (AMI) of conservation concern as leded in the Wildlife, Plane worksheet of the companying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light or plants and the plants of the accompanying Supplint for light per level steps season (May 3.0) for most species). The plants of the steps of the plants of the supplint of the plants of the supplint of	OF29		Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
Procedure of one of make of the parts species leaded in the Parts, Year worknessed of the Scorphaphy Supprison Be, of the As a within a supprison of the Suppri		Concern			
scoropanying Supplied (le. Presented for one more of the advantage) species (SME), WEW) of conservation concern as Island in the Wildlie, Bare worksheet of the Presented for one more of the internal present plant of the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the source of this layer, which should be checked periodically for updates, its May July of the accompanies the calculator, calcul				0	
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Da	te: 9 October 2019	Site Identifier: MC-Trib1C-W-04	Investigator:	: Matt Alexan	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

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#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
IA sh ncludi adja lescri	ould also include part of a le the open water part adj cent " is used synonymo libed features along their a	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegelated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2		B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Woody Height & Form Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Decudious striutus in tim region tosaan yin include duttinitious, Labriator lea, varyoen y (winderia), includeberry, cranberry, cloudberry, sweetigale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is ~25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	1	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
lote :		F3 was marked 2 or greater, SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie: [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
,	Height Class Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[Part, 1114, 111, 2000), 2013]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
		B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, of the vegetation failer than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.		
7	Large Snags (Dead Standing Trees)	B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tail. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]
7	Standing Trees)	B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0	at least 2 m tall. [POL, SBM, WBN]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NATIONING ANGLE OF INCIDENTS. [F.A, F.N., INV., INV., O.E., F.N., SEIN, SEINS]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
E10	Constant less entretts	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	The description of the second state of the FC IAM AID DISTRICT OR AID THE
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
		Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
E1.4	Coil Touture	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	ICC MD OF DI DD Core CFC WCI
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
E1E	Charakini Familia	between thumb and forefinger.		This address of the state of th
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	ridolidio	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
Г14	Harbanaus (/ of	>10,000 sq. m.	0	[AM, WBF, WBN]
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WOF, WON]
	3	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	-
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	Ť	[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	
Ec.		>95% of the vegetated area.	0	
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file. invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species appear to be absent in the AA, or are present only in trace amount (a tew individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
F21	Invasive Cover Along Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
	3	vegetated zone within the wetland. Enter "1" if true, "0" if false.		
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23	Edddsiiiio Wolland	a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwate
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[
F40	Indiated Island	Extensive. The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on	0	[WBN]
	Isolated Island	all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	Ü	
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	(EC, PR, WBF)
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these off with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	-
		Measurement). No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland,	0	
E42	0	ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	J	Maintan of market model and be a control of the con
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography)	0	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		that does not appear to drain the wetland artificially during most of the growing season.		
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the wetland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L. in the column to the right, if measured, or answer next row.] Conductivity is: [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
1 47		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	(ra, ra, ra, sona, sona, wong
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.		
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
		Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	Neimer or above is true, aimough some groundwater may discharge to or now through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
		>10%.	0	SR, WBF, WBN, WS]
Note for		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.		
		Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	Vegetated Buffer as %			[MI, FA, FI, MV, MV, FI, FOE, FIV, SDM, SCIS, SIV, STI, WON]
adjacei		walling a zone exercing so in aleasary non the AAS edge with uplantia anoth other wellands, the percentage that contains perefinial vegetation cover (except lawns, row crops, heavily grazed land, confer plantations) is: -5%.	0	(wii, 13, 13, 110, 110, 110, 100, 110, 110)
adjacei	Vegetated Buffer as %	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%. 5 to 30%.	0	pan, r., r., m., m., r., e., r., e., r., e., e., e., e., e., e., e., e., e., e
adjacei	Vegetated Buffer as %	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.		pan, 14, 14, 14, 14, 14, 15, 14, 55m, 55h, 544, 544, 164

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%.	0	
		5-30%.	0	-
		>30%.	0	1
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
	Ollis of Steep Ballics	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		So not minute dynamical trees as potential data sites. [1-Oct, Octor)
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	1	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	-
		Burned 6-10 years ago.	0	-
		Burned 11-30 years ago.	0	
58	Vicibility	Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or	1	[DIL STD WDEv]
38	Visibility	the maximum percentage of the wegand that is visible from the best variable point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	1	
		25-50%.	0	
		>50%.	0	
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		water am dense struct mickets. Maintained roads, parking areas, or fool-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [<u>Note:</u> Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actuary waters of a time (pot simply werear from) man a venture of coat. Do not include visitus on frain coatside of the real state of the melland is visible from the trails and they are within 30 m of the welland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	1
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	0	1
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	Alea	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	1
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	1	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	
		Trapping of furbearers.	0	
		None of the above.	0	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0]
		100-500 m. away.	0	
		>500 m. away, or no information.	1	
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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	Site Identifier: MC_W-03A	,	Date: 8 October 2019			
essor (S) Data Form for Non-Tid	al Wetlands. WESP-AC for New B	runswick. Version 2.		Ded		
Aberrant Timing of Water Inputs				Dat		
	ely to have caused the timing of water inputs (but not necessarily their y (larger or more frequent spikes but over shorter times). [FA, FR, IN]		mutea (smailer or less frequent peaks spread over longer times			
Stormwater from impervious surfaces that drains directly to the	wetland.					
Water subsidies from wastewater effluent, septic system leakag	e, snow storage areas, or irrigation.					
Regular removal of surface or groundwater for irrigation or other	consumptive use.					
Flow regulation in tributaries or water level regulation in adjoining	g water body, or other control structure at water entry points that regu	lates inflow to the wetland.				
A dam, dike, levee, weir, berm, or fill within or downgradient from the wetland that interferes with surface or subsurface flow in/out of the AA (e.g., road fill, wellpads, pipelines).						
Excavation within the wetland, e.g., dugout, artificial pond, dead	end ditch.					
Artificial drains or ditches in or near the wetland.						
Accelerated downcutting or channelization of an adjacent or inte	rnal channel (incised below the historical water table level).					
Logging within the wetland.						
Subsidence or compaction of the wetland's substrate as a result						
Straightening, ditching, dredging, and/or lining of tributary channels		the state of the s	. 6 th - A A . th - a . 1 th - "O'-" for th in the fellowing results			
	nelow, assign points. However, if you believe the checked items had n ion if the checked items never occurred or were no longer present.	o measurable effect on the liming of water conditions in any part o	ir the AA, then leave the "US" for the scores in the following for			
	Severe (3 points)	Medium (2 points)	Mild (1 point)			
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.			
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.			
Score the following 2 rows only if the altered inputs began within	past 10 years, and only for the part of the wetland that experiences th	ose.				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.			
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.			
			Sum=			
			Stressor subscore=	0		
				0.		
Stormwater or wastewater effluent (including failing septic syste Metals & chemical wastes from mining, shooting ranges, snow s	ng in either the wetland or its CA that is likely to have accelerated th		TR)			
In the last column, place a check mark next to any item — occurri. Stormwater or wastewater effluent (including failing septic syste Metals & chemical wastes from mining, shooting ranges, snow s npriddefault.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadside if any items were checked above, then for each row of the table It.	ng in either the wetland or its CA that is likely to have accelerated thems), landfills, industrial facilities. torage areas, oil/ gas extraction, other sources (download many local sources), or other areas in the CA. The control of the checked litems did not believe the checked litems did	ions from National Pollutant Release Inventory and view KMZ over	rlay in Google Earth. https://www.ec.gc.ca/inrp-			
In the last column, place a check mark next to any item — occurri. Stormwater or wastewater effluent (including failing septic syste Metals & chemical wastes from mining, shooting ranges, snow s npriddefault.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadside if any items were checked above, then for each row of the table It.	ng in either the wetland or its CA that is likely to have accelerated thems), landfills, industrial facilities. torage areas, oil/ gas extraction, other sources (download many local states, or other areas in the CA. The condition if the checked items never occurred or were no long with the condition if the checked items never occurred or were no long.	ions from National Pollutant Release Inventory and view KMZ ove of cumulatively expose the AA to significantly higher levels of conta ger present.	rlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the			
In the last column, place a check mark next to any item occurric Stormwater or wastewater effluent (including failing septic system Metals & chemical wastes from mining, shooting ranges, snow supri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadside the suprise of the table to tollowing rows. To estimate effects, contrast the current conditions.	ng in either the wetland or its CA that is likely to have accelerated thems), landfills, industrial facilities. torage areas, oil/ gas extraction, other sources (download many locations, or other areas in the CA. selow, assign points. However, if you believe the checked items did now with the condition if the checked items never occurred or were no long Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over the standard of the standard	rlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the			
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last columnate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	0
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	0
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	0
* high intensity- extensive off road vehicle use plowing grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.		,	Suili=	
		· · · · · · · · · · · · · · · · · · ·	Stressor subscore=	0.00
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a		Stressor subscore=	
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-Trib1C-W-04

Date: 8 October 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.189587N 66.183085W

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.57	Moderate	1.33	Lower	5.24	1.40
Stream Flow Support (SFS)	2.66	Lower	6.45	Higher	1.42	3.76
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	4.77	Higher	0.00	Lower	6.29	0.33
Nitrate Removal & Retention (NR)	2.61	Moderate	0.25	Lower	5.44	1.33
Carbon Sequestration (CS)	8.44	Higher			8.20	
Organic Nutrient Export (OE)	3.36	Moderate			4.11	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.40	Moderate	0.83	Lower	5.77	1.69
Amphibian & Turtle Habitat (AM)	2.81	Lower	0.87	Lower	4.79	2.62
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.46	Moderate	2.50	Lower	5.36	2.50
Pollinator Habitat (POL)	8.64	Higher	0.00	Lower	6.96	0.00
Native Plant Habitat (PH)	4.95	Moderate	4.73	Moderate	5.08	4.11
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.00	Lower		1.88
Wetland Ecological Condition (EC)			5.66	Moderate		7.50
Wetland Stressors (STR) (higher score means more stress)			2.54	Moderate		3.19
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.66	Moderate	1.33	Lower	5.24	1.40
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.27	Higher	0.29	Lower	7.70	0.98
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.13	Moderate	4.44	Moderate	4.30	2.79
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.69	Lower	0.52	Lower	2.87	1.57
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.66	Higher	3.57	Moderate	6.38	3.15
WETLAND CONDITION (EC)			5.66	Moderate		7.50
WETLAND RISK (average of Sensitivity & Stressors)			1.27	Lower		2.54
	NOTE: A coor	e of 0 does not	mean the func	tion or benefit i	e abcent from t	he wetland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MC-Trib1D-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	9 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.192384
Longitude (decimal degrees):	-66.186994
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	5
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	5
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Da	te: 9 October 2019	Site Identifier: MC-Trib1D-W-01	Investigator:	Derrick M	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

,,	to die	Condition of the	D. I	Definitions In 1 11
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja lescn	ould also include part of it the open water part adj cent " is used synonymou bed features along their it	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegelated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	- 1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA. coniferous, 1-9 cm diameter and >1 m tall.	1	ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie:
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	1	
	Height Class	Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM, INV, NR, PH, SBM, Sens]
6	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		Comprise 30-70 %. Choose between A1 and A2 and mark the choice with a 1 in the adjoining Column. Otherwise go to b below.		
6		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6			0	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely		
7	Large Snags (Dead	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0	
7	Large Snags (Dead Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]
7	Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation tailer than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 0	at least 2 m tall. [POL, SBM, WBN]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDURE INTIMITY algae of incidens. [1 A, 1 TK, 1944, 1944, O.E., FTI, 3019, 36115]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	-
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	1
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	1
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	1
F13	Upland Inclusions	Several (extensive micro-lopography). Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	Spidira Madaiona	Few or none.	1	
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	0	1
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	1
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	1
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	-
		>95% of the vegetated part of the AA.	0	1
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	-
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
	go oo.si	Scages (carea spe), and contingues (<i>Engineral in spe)</i> , occupy. <5% of the vegelated area, or none.	0	
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
	opoulos	those species together comprise > 50% of the areal cover of neroaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
F20	Invacive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
. 20	Invasive Plant Cover	file.		[20,11,102,0013]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	Species is:	1	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	1
				-
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	
F22 F23	Fringe Wetland Lacustrine Wetland	most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the		[WBF, WBN, WCv] [FR, PR, PU, WBF, WBN]

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E10		Extensive.	0	Survey
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" dlich,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the wetland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
	,	permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *17.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L. in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
1 47		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	[FA, FR, FR, SUID, WUF, WUN]
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.		
-		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	and a second conditions to the condition of the condition
CC4	Internal Co. III	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the contract of th
F51	Internal Gradient	The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note for	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
	nt. In many situations, th	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m talerally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	1	
		270.70, or an use afted within 30 fit of the AA edge is offici Wellands. SALP (U P33.	0	<u> </u>

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	1	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	1	
		5-30%.	0	
	Cliffe an Chana Banda	>30%.	0	Danetin Indiana Indian
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, fatus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	0	TO BUILDING TO BUI
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	1	
		25-50%.	0	
		>50%.	0	[DLL CTD]
59	Non-consumptive Uses - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		water and derise struct mickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	1
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the wetland is visible from the traits and they are within 30 m of the wetland edge. In that case include only the area occupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	4
		5-50% and no inhabited building is within 100 m of the AA. 5-50% and inhabited building is within 100 m of the AA.	0	4
		50-95%, with or without inhabited building nearby.	0	-
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note	-	[AM, PH, PU, SBM, STR, WBF, WBN]
	Area	above.]	- 1	
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64. 5-50%.	0	
		50-95%.	0	-
		>95% of the AA.	0	1
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	1
		100-500 m. away.	0]
		>500 m. away, or no information.	1	
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplinfo file for list of plant indicators (calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	0	[PH, PR]

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Da	te: 9 October 2019	Site Identifier: MC-Trib1D-W-01	Investigator:	Derrick M	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

,,	to die	Condition of t	D. I	Definitions In 1 11
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja lescn	ould also include part of t e the open water part adj cent " is used synonymou bed features along their o	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should [acent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	- 1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if -95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if -45%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA. coniferous, 1-9 cm diameter and >1 m tall.	1	ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
- 2	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM, INV, NR, PH, SBM, Sens]
6	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6				
6		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
6				
6		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely.		
7	Large Snags (Dead	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Large Snags (Dead Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	Snags are dead standling trees that often (not always) lack bark and foliage. Include only ones that at at least 2 m tall. [POL, SBM, WBN]
77		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absort. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely—absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the welland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	
7		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	
7	Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>80hectare) and a pond, take, or slow-flowing water wider than 10 m is within 1 km. Several (>80hectare) but above not true.	0 0	

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDURE INTIMITY algae of incidens. [1 A, 1 TK, 1944, 1944, O.E., FTI, 3019, 36115]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	-
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	1
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	1
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate. Several (extensive micro-topography).	0	1
F13	Upland Inclusions	Several (extensive micro-lopography). Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	Spidira Madaiona	Few or none.	1	
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	0	1
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	1
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	1
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	-
		>95% of the vegetated part of the AA.	0	1
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	-
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
	go oo.si	Scages (carea spe), and contingues (<i>Engineral in spe)</i> , occupy. <5% of the vegelated area, or none.	0	
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
	opoulos	those species together comprise > 50% of the areal cover of neroaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
F20	Invacive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
. 20	Invasive Plant Cover	file.		[20,11,102,0013]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along Upland Edge	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
		Species is:	1	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	1
				-
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	
F22 F23	Fringe Wetland Lacustrine Wetland	most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the		[WBF, WBN, WCy] [FR, PR, PU, WBF, WBN]

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	1
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	Water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water that is shaded	<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
Is the A (Conne F29		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
1 2 7	Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		10 - 50 cm deep. 0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - Гиг deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	1
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 mb y 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	and unhidden by a forest or shrub canopy) is:	0	
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	
		10 - 29 m.	0]
		30 - 49 m. 50 - 100 m.	0	-
		50 - 100 m. > 100 m, or open water is absent at that time.	0	1
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:		If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	-
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0	1
Ec.		>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation.	0	
		25-75% of the emergent vegetation. >75%, of the emergent vegetation.	0	1
			_	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E10		Extensive.	0	Survey
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" dlich,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the wetland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
	,	permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *17.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L. in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
1 47		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	[FA, FR, FR, SUID, WUF, WUN]
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.		
-		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, CB, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	and a second conditions to the condition of the condition
CC4	Internal Co. III	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the control of the contr
F51	Internal Gradient	The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note for	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
	nt. In many situations, th	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m talerally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	1	
		270.70, or an use afted within 30 fit of the AA edge is offici Wellands. SALP (U P33.	0	<u> </u>

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er Slope s or Steep Banks	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE): Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: 47% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%. 5.30%. 5.30%. 3.30%. in the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, inpoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3.20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 11:30 years ago. Burned 3.0 years ago. Burned 3.0 years ago. Burned 3.0 years ago. Burned 3.0 years ago. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25.50%. Assuming access permission was granted, select ALL statements that are true of the AA as it currently ex	0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	[NRv, PRv, Sens, SRv] Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR] [PU, STR, WBFv]
er Slope s or Steep Banks v or Expanded land n History -consumptive - Actual or	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide. The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: <1% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2.5%. 5.30%. >30%. >30%. >30%. >10 m the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, and created or expanded within 120 years or not. More than 1% of the AA's previously vegetated area: Burned 11-30 years ago. Burned 4-10 years ago. Burned 4-10 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
s or Steep Banks or or Expanded land i History -consumptive s - Actual or	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of: -11% (flat – almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%. 3-30%. 3-30%. 3-30%. 1 the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned 4-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	1 0 0 0 0 0 0 0 0 0 0 0	Do not include upturned trees as potential den sites. [POL, SBM] Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
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s or Steep Banks or Expanded land in History -consumptive - Actual or	2-5%. 5-30%. 5-30%. 5-30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 2-55%.	1 0 0 0 0 0 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C: NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
or or Expanded land In History Dillity -consumptive S - Actual or	5-30%. 5-30%. 5-30%. 1n the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no). Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment): No. Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255%.	0 0 0 0 0 0 0 0 0 0 0	Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens] Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
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-consumptive s - Actual or	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-130 years ago. Burned 1-130 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 0	
-consumptive s - Actual or	Yes, and created or expanded 3-20 years ago. Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-130 years ago. Burned 1-130 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 0 0 0	
-consumptive s - Actual or	Yes, and created or expanded within last 3 years. Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 11-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%.	0 0 0 0 0 0 0	
-consumptive s - Actual or	Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago. Burned 3-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 0 1	
-consumptive s - Actual or	Unknown if new or expanded within 20 years or not. More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25-50%.	0 0 0 0 1	
-consumptive s - Actual or	More than 1% of the AA's previously vegetated area: Burned within past 5 years. Burned 6-10 years ago. Burned 1-30 years ago, or no evidence of a burn and no data. The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	0 0 0 1	
-consumptive s - Actual or	Burned within past 5 years. Burned 6-10 years ago. Burned 11-30 years ago. Burned 3-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25%.	0 0 1 1	
-consumptive s - Actual or	Burned 6-10 years ago. Burned 11-30 years ago, Burned 13-30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 550%.	0 0 1 1	[PU, STR, WBFv]
-consumptive s - Actual or	Burned 11-30 years ago. Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 255%. 25-50%.	1	[PU, STR, WBFv]
-consumptive s - Actual or	Burned >30 years ago, or no evidence of a burn and no data. The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: -25%. 25-50%.	1	[PU, STR, WBFv]
-consumptive s - Actual or	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25-50%.		[PU, STR, WBFv]
-consumptive s - Actual or	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is: 25%. 25.50%.		[רט, אוא, שפרע]
s - Actual or	25·50%. >50%.		
s - Actual or	>50%.	0	
s - Actual or			
s - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	0	TOLL AND T
			[PU, STR]
	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
	contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
isited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
	- <5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	1
	5-50% and no inhabited building is within 100 m of the AA.	0	1
	5-50% and inhabited building is within 100 m of the AA.	0	1
	50-95%, with or without inhabited building nearby.	0	
	>95% of the AA with or without inhabited building nearby.	1	
quently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
•	<5% If F60 was answered ">95%" (mostly never visited). SKIP to F64.	1	
	5-50%.	0	1
	50-95%.	0	1
	>95% of the AA.	0	1
P - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
P - Wildlife ection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
sumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
visioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0	1
	Fishing.	0	1
	Trapping of furbearers.	0	1
	None of the above.	1	
nestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
	Within 0-100 m. of the AA.	0	1
	100-500 m. away.	0	1
	>500 m. away, or no information.	1	1
	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators (calciphilles). Enter 1 lf more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	0	[PH, PR]
e c	Soils Wildlife tition Implive Uses sioning Services)	above	above

FieldF form - Non-tidal Page 5 of 5

gator: Derrick Mitchell	Site Identifier: MC-Trib1D-W-01	D	ate: 9 October 2019	
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2		
	Wettands. WEST -ACTOLINEW B	Turiswick. Version 2.		
Aberrant Timing of Water Inputs				
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time:	
Stormwater from impervious surfaces that drains directly to the wetle	, ,			
Water subsidies from wastewater effluent, septic system leakage, si	now storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.			
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.		
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	it of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.			
Artificial drains or ditches in or near the wetland.				
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).			
Logging within the wetland.				
Subsidence or compaction of the wetland's substrate as a result of r	· · · · · · · · · · · · · · · · · · ·			
Straightening, ditching, dredging, and/or lining of tributary channels.		no many rable offset on the timing of water conditions in any part of	f the AA then leave the "O's" for the searce in the following re-	
If any items were checked above, then for each row of the table below To estimate effects, contrast the current condition with the condition i		io measurable effect on the tilling of water conditions in any part of	i uie 🙉, uien leave uie -u s- tot uie scores in uie tollowing fov	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began within past				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled. Sum=	
rasimess of maing.				
resimoss of munity.				
Accelerated Inputs of Contaminants and/or solution in the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including falling septic systems).	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=	
Accelerated Inputs of Contaminants and/or a lin the last column, place a check mark next to any item – occurring in	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=	
Accelerated Inputs of Contaminants and/or and In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow stora	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=	
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Accelerated Inputs of Contaminants and/or and In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storanpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table below	in either the wetland or its CA – that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. w, assign points. However, if you believe the checked items did no	tions from National Pollutant Release Inventory and view KMZ over	Stressor subscore= R/ lay in Google Earth. https://www.ec.gc.ca/inrp-	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	in the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.	· · · · · · · · · · · · · · · · · · ·		
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
			Stressor subscore=	U.
	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.0
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-Trib1D-W-01

Date: 9 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.163275, 66.199397

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

сотранеа.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.35	Moderate	1.63	Lower	5.08	1.70
Stream Flow Support (SFS)	5.63	Moderate	7.40	Higher	3.00	4.32
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.24	Higher	0.69	Lower	8.11	0.42
Phosphorus Retention (PR)	5.07	Higher	0.48	Lower	6.50	0.76
Nitrate Removal & Retention (NR)	3.23	Moderate	1.94	Lower	5.82	2.83
Carbon Sequestration (CS)	7.54	Higher			7.82	
Organic Nutrient Export (OE)	5.01	Moderate			4.99	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.61	Moderate	0.83	Lower	5.49	1.69
Amphibian & Turtle Habitat (AM)	3.14	Lower	0.78	Lower	4.96	2.57
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.27	Moderate	2.50	Lower	5.20	2.50
Pollinator Habitat (POL)	9.62	Higher	0.00	Lower	7.75	0.00
Native Plant Habitat (PH)	5.27	Moderate	4.97	Moderate	5.21	4.32
Public Use & Recognition (PU)			2.26	Lower		1.94
Wetland Sensitivity (Sens)			0.00	Lower		2.12
Wetland Ecological Condition (EC)			4.70	Moderate		6.94
Wetland Stressors (STR) (higher score means more stress)			1.92	Lower		2.97
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	5.63	Higher	1.63	Lower	5.08	1.70
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.21	Higher	1.49	Lower	7.59	2.09
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.72	Moderate	5.07	Higher	4.43	3.16
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.88	Lower	0.47	Lower	2.97	1.54
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.33	Higher	3.73	Moderate	6.90	3.29
WETLAND CONDITION (EC)			4.70	Moderate		6.94
WETLAND RISK (average of Sensitivity & Stressors)			0.96	Lower		2.54
	NOTE A				1 15 1	

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MC-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	October 9, 2019
	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.188198
Longitude (decimal degrees):	-66.187343
Is a map based on a formal on-site wetland delineation available?	
Approximate size of the Assessment Area (AA, in hectares):	8.9 ha
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	90
What percent (approx.) of the wetland were you able to visit?	90
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations	
DF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no	
		New Brunswick	1	spatial data exists in a particular province.	
		Nova Scotia	0		
		Prince Edward Island	0		
		Newfoundland-Labrador	0		
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water	
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up	
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure	
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries	
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]	
		10 to 100 hectares. >100 hectares.	0		
)F3	Ponded Water &	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only	
,, ,	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]	
		<0.01 hectare (about 10 m x 10 m).	0		
		0.01 - 0.1 hectare. 0.1 - 1 hectare.	0	1	
		1 to 10 hectares.	0	1	
		10 to 100 hectares.	0	1	
		>100 hectares.	1		
)F4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).	
	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:		Exclude confer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens	
		<0.01 hectare (about 10 m x 10 m).	0		
		0.01 - 0.1 hectare.	0		
		0.1 - 1 hectare.	0	4	
		1 to 10 hectares. 10 to 100 hectares.	0	4	
		10 to 100 hectares. 100 to 1000 hectares.	0	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1		
DF5	Distance to Large Vegetated Tract	Proton rectains: [rms is nearly aways we ariswe in realised in realised and countries and countries are supported in the minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]	
	regulated max	-50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AAI itself contains -3375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	1	Country to the district of the state of the	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0		
		50-500 m, and not separated.	0	1	
		50-500 m, but separated by those features.	0	1	
		0.5 - 5 km, and not separated.	0	1	
		0.5 - 5 km, but separated by those features.	0	1	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	1	
DF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OFT. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OFT. If not, consider:	0	For this question only, consider moss to be herbaceous vegetalion. Determine the score by viewing aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffer of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMN, PHA	
		The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter " " NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"	r	POLv, SBMv, WBFv, WBNv)	
DF7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in fows. [AMv, PHv, POLv, SBMv]	
		The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"			
)F8	Local Vogotated Cover	[* NOTE: woody cover = trees & shrubs taller than 1 m.]		In Condis Earth, draw the Elim buffer and then estimate land cover personages, or do CIS analysis	
JFδ	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]	
		<5% of the land.	0	-	
		5 to 20% of the land.	0	-	
		20 to 60% of the land.	0	-	
		60 to 90% of the land.	0		
)F9	Type of Land Cover	>90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]	
JI 7	Alteration			[run, John]	
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	1	
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0		
	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the neares population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the	
)F10	Nearest Population	<100 m.	0	square kilometer. In Google Earth, click on the Ruler Icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to	
)F10	Center				
)F10	Center	100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but	
OF10	Center	100 - 500 m. 0.5- 1 km.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]	
)F10	Center				

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despile ils omissions) to show surrounding wetlands and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads
				hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
	· · · · · · · · · · · · · · · · · · ·	450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	- 1	
		0.5 - 1 km, but separated by those features.	0	
0544	D	None of the above (the closest patches or corridors that large are >1 km away).	0	D
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m · 1 km.	0	
		1 - 2 km.	0	
		2-5 km.	1	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km. 10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non-			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood
		longuis. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	modeling. [WSv]
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.12	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
OE21	Degraded Water	all wetlands in this region. The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
UFZI	Downstream			may use existing data, or monitor waters as part or this welland assessment. [INRV, PRV, SRV]
		The condition is present within 1 km downslope and connected to the AA by a channel.	1	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		Samping during bour low water periods and times with right furion (storms, showmen) indicates no problems in eliner the AA or inhowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
0500		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the calchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding analydr to this procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its calchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Altas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raisee	0	
OF23	Unvegetated Surface in	bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking tots		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	
		10 to 25%.	0	
		>25%.	0	

		-		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		THE SHARING IS		
		Mostly true.	0	
		Somewhat true.	0	
			1	
		Mostly untrue.		
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE), north-facing contributing area.	0	1
		Southward (S, SW), south-facing contributing area.	- 1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OE26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:	Ů	Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
01 20	(Path Length)	The nonzoniar now distance from the welland 3 filler to dutler is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(i dai Longar)	<10 m.	0	and miles are datices, and dagment by new inspection. [111, 62, 111, 617, 116]
		10 - 50 m.	0	1
		50 - 100 m.	0	
		100 - 1000 m.	1	1
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
0527	Crowing Dogge Dev		U	This lover was provided by Dr. Don McKenney of the Constitution of Constitution of the
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
		11.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	l	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	Ī	aters.html [AM. FA. FR. INV. WBF. WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	AM, I A, I K, IIVV, WOI , WON]
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	ľ	
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	1	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	0	
0500		3 13 13	U	D 116 1 6 100D0 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv, WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying SuppInfo file, or the AA is within a	- 1	WDINV
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	1
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	1
		accompanying Supplnfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	1
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	0	1
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	black back Nesting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		This was provided by Dr. David Ecske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				Company of the Compan
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	I	
			<u></u>	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	I	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are	1	
		agencies for more recent information.	<u> </u>	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tollank (not	Ī	
		0).	Ī	
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	Ī	
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
	330	the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l -	[·
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.	I	
OE27	Calcaroous Pagion	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	Λ.	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.	Ī	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		mater is not actain (μπ is asually ≥0).see i iguie Aro ili Appendix A of the Mahadi. Il no hidp coverage, change (widhk.	Ī	
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	1
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere	l	
		conditions.	<u> </u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	1
			I	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

D	ate: 9 October 2019	Site Identifier: MC-W-01	Investigator:	Derrick Mi	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

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#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
		the AA should include all persistent waters in ponds smaller than 8 hectares (~283 m on a side) that are adjacent to the AA. The		
nclud adja lescri	e the open water part ad, cent " is used synonymo bed features along their i	the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should ijacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usty with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegelated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetglade, alder, willow, birch, ash, dogwood, and a few others. Il you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	accessing to the second
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
ote :	If none of top 4 rows in	F3 was marked 2 or greater, SKIP to F9 (N fixers).		
1	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
_		those species together do not comprise > 50% of such cover.	0	
J	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA. Conference. 1-9 cm diameter and > Im tall.	1	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
,	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		נאיט, איט, איז
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
		B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Lorgo Coors /Dara	B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of ferror easier (disprete: 20 cm) is the AA Ake of ferset unless one within 10 m of the uniform date is:	1	Spage are dead standing trace that often (not always) but had and filter to be but a
7	Large Snags (Dead Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7	Large Snags (Dead Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0 1 0	
7		absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1	
7	Standing Trees)	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	1	

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE NATIONAL BASE OF INCIDENTS. [F.A., F.N., INVV, INVV, OL., F.N., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F10	Constant less entretts	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	The description of the second state of the sec
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed > 10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	
		Several (extensive micro-topography).	1	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA).	1	
E4.	0.77	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	Too ND of DU DD o
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	1	
F4-	0	between thumb and forefinger.		
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
		None, or <100 sq. m.	0	
		100-1000 sq. m.	1	
		1000 – 10,000 sq. m.	0	
F4.6		>10,000 sq. m.	0	CAM MOS MON
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
		<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (<i>Carex</i> spp.) and cottongrass (<i>Eriophorum</i> spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one or the following: Those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file. invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species appear to be absent in the AA, or are present only in trace amount (a rew individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
121	Upland Edge	Adong the wealand-optaind boundary, the percent of the optaind edge (within 5 in opsidee from the wealand) that is occupied by invasive plant species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
	.5	vegetated zone within the wetland. Enter "1" if true, "0" if false.	L	• · · · · · · • · · · · · · · · · · · ·
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq, m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA. 20-50% of the AA.	0	
		50-95% of the AA.	0	1
F0/		>95% of the AA. True for many fringe wetlands.	0	(FA IVO)
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	1	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	-
		50-75% of the water is shaded.	0	†
		>75% of the water is shaded.	0	
F27	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	
F28	Annual Water	>95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	0	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		10 cm - 50 cm change.	1	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	
		1-2 m change. >2 m change.	0	-
Is the /		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
	Class	AA, is: <10 cm deep (but >0).	0	safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	1	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	-
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	1	WBF, WBN]
		One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	-
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5-30% of the water.	0	1
		30-70% of the water.	0	
		70.95% of the water. >95% of the water	0	
F32	Ponded Open Water - Minimum Size	293.60 unlew waters. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	1	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
		None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	-
		5-30% of the ponded water. 30-70% of the ponded water.	0	-
		70-99% of the ponded water.	1	
F0.4	145 111 637 1 1 1	100% of the ponded water.	0	
F34	Width of Vegetated Zone within Wetland	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is:		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
		<1 m.	0	SBM, Sens, SR, WBN]
		1 - 9 m.	0	
		10 - 29 m. 30 - 49 m.	0	1
		50 - 100 m.	1	
F35	Elat Charolina Futant	> 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Flat Shoreline Extent	slope less than about 5% measured within 5 m landward of the water) is:	_	in several isolated pools are present in early summer, estimate the percent of their conective shorelines that has such a gentle slope. [SR, WBN]
1 33		<1% of the water edge.	0	
.1 33		1-25% of the water edge.	0	
1 00		1-25% of the water edge. 25-50% of the water edge.	0	
1 55		25.50% of the water edge. 50-75% of the water edge.	0	
F36	Robust Emeraents	25-50% of the water edge.	0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
	Robust Emergents	25-50% of the water edge. 50-75% of the water edge. >75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmiles</i>), or tall (>1m) bulrush is:	0 1 0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
	Robust Emergents	25-50% of the water edge. 50-75% of the water edge. >75% of the water edge. >75% of the water edge. >75% of the water edge. >15% of the water edge. >15% of the water edge. >15% of the water edge. \$100 the water e	0	
	Robust Emergents	25-50% of the water edge. 50-75% of the water edge. >75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmiles</i>), or tall (>1m) bulrush is:	0 1 0	

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	1	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined white visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.mccan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	1	,,,,,
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	0	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	1	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Was not measured, but plants that indicate saline conditions cover much or the vegetated AAL criter 1. Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	1	
		vegetated areas near surface water.		
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
	smar ordulont	<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		1.5.1., 2.1. 2.1. 2.1. 2.1. 2.1. 2.1. 2.1.	-	

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type or cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
D # 01		0	(ND DD C CD)
Buller Slope	percent slope of:		[NRv, PRv, Sens, SRv]
	•	0	
	2-5%.	0	1
	5-30%.	0	
	>30%.	0	
Cliffs or Steep Banks	In the AA or within 100 m, there are elevaled terrestrial features such as cliffs, fatus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	0	
			4
			1
		0	†
	Unknown if new or expanded within 20 years or not.	1	
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	
	Burned 6-10 years ago.	0	1
	Burned 11-30 years ago.	0	
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
			-
Non-consumptive		U	[PU, STR]
			(0,0 mg
	water and dense shrub thickets.		
	contiguous waters.		-
Jnvisited Core Area	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the		[AM, FAV, FRV, PH, PU, SBM, STR, WBF, WBN]
	trail.)		
	<5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	
	-		-
	-		
		1	
Frequently Visited		-	[AM, PH, PU, SBM, STR, WBF, WBN]
Area	above.]		(· · · · · · · · · · · · · · · · · · ·
	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
	5-50%.	0	
BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on	0	[PH, PU]
BMP - Wildlife	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets,	0	[AM, PU, WBF, WBN]
	of wildlife (except during hunting seasons). Enter "1" if true.		
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	
	· · · · · · · · · · · · · · · · · · ·		1
	· ·		4
			1
Domestic Wells		U	[NRv]
Doniesuc Wells			
			4
		0	
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplinfo file for list of plant indicators	0	[PH, PR]
Culculcous Fell	(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	I	[. · · · · · · · · · · · · · · · · · ·
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Unvisited Core Area Frequently Visited Area BMP - Soils BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	Side Stope The interpretation with pure provious surface or managed vegotients or all, both, one crops, unswerder and, this, landshife. The stopesh and marked paint of the speker already of the purpose of the purpos	mperioss surface, e.g., panel root, parting Ixt, building, exposed root. But or not have previous surface or managed registries, e.g., burn, not crops, unprevious disc, burdeduce or managed registries, e.g., burn, not crops, unprevious disc, burdeduce or managed registries, e.g., burn, not crops, unprevious disc, burdeduce or managed registries, e.g., burn, not crops, unprevious root, file and updated area has a percent size of the file of the f

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igator: Derrick Mitchell	Site Identifier: MC-W-01	D	ate: 9 October 2019					
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2						
	Wettands. WEST -ACTOLINEW B	Turiswick. Version 2.						
Aberrant Timing of Water Inputs								
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time.					
Stormwater from impervious surfaces that drains directly to the wetland.								
Water subsidies from wastewater effluent, septic system leakage, snow storage areas, or irrigation.								
Regular removal of surface or groundwater for irrigation or other con	nsumptive use.							
Flow regulation in tributaries or water level regulation in adjoining water	ater body, or other control structure at water entry points that regu	ulates inflow to the wetland.						
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	ut of the AA (e.g., road fill, wellpads, pipelines).						
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.							
Artificial drains or ditches in or near the wetland.				<u> </u>				
Accelerated downcutting or channelization of an adjacent or interna	il channel (incised below the historical water table level).			_				
Logging within the wetland.	machinery livestack fire drainage or off read vehicles			-				
Subsidence or compaction of the wetland's substrate as a result of a Straightening, ditching, dredging, and/or lining of tributary channels.	· · · · · · · · · · · · · · · · · · ·			<u> </u>				
If any items were checked above, then for each row of the table belo		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row	c				
To estimate effects, contrast the current condition with the condition is		io measurable eneed on the timing of water continuous in any part of	and the second in the second in the following for					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.					
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	L				
Score the following 2 rows only if the altered inputs began within pas			0.00					
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.					
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled. Sum=					
<u> </u>			Sulli=					
		Г	Strassar subscara-					
In the last column, place a check mark next to any Item occurring to Stormwater or wastewater effluent (including failing septic systems)	n either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,						
In the last column, place a check mark next to any item occurring in	n either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	R					
In the last column, place a check mark next to any item - occurring in Stormwater or wastewater effluent (including falling septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	R					
In the last column, pace a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca	, , , , , , , , , , , , , , , , , , , ,	R					
In the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora optidefault asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belo	in either the wetland or its CA – that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. w, assign points. However, if you believe the checked items did no was a sign points. However, if you believe the checked items did no was a sign points. However, if you believe the checked items did no was a sign points.	tions from National Pollutant Release Inventory and view KMZ over	R/ rlay in Google Earth. https://www.ec.gc.ca/inrp-					
In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow storanpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	in either the wetland or its CA – that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca r other areas in the CA. w, assign points. However, if you believe the checked items did no the condition if the checked items never occurred or were no lond the condition if the checked items never occurred or were no lond.	ntions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of contanger present.	raly in Google Earth. https://www.ec.gc.ca/inrp- raly in Google Earth. https://www.ec.gc.ca/inrp- raly in Google Earth. https://www.ec.gc.ca/inrp- raly in Google Earth. https://www.ec.gc.ca/inrp- raly in Google Earth. https://www.ec.gc.ca/inrp-					
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In the last column, place a check mark next to any item - occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow storanpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belofollowing rows. To estimate effects, contrast the current condition with Usual toxicity of most toxic contaminants:	in either the wetland or its CA that is likely to have accelerated to a landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local rother areas in the CA. w. assign points. However, if you believe the checked items did in the condition if the checked items never occurred or were no loth. Severe (3 points) Industrial effluent, mining waste, unmanaged landfill.	of cumulatively expose the AA to significantly higher levels of contanger present. Medium (2 points) Cropland, managed landfill, pipeline or transmission rights-of-way.	ray in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "O's" for the scores in the Mild (1 point) Low density residential.					
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	in the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				1
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
			Stressor subscore=	0.00
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present in its less). [CS, INV, NR, PH, SR, STR]	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
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In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause arctificial water level or flow manipulations sufficient to cause ero. If any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the cheffects.	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a possible plants in the property of the plants in the plants i	ported from another wetland. not measurably alter the soil structure and/or topography, then lea	st 100 years or since wetland was created or restored (whichever the "0"s" for the scores in the following rows. To estimate Mild (1 point)	1
In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause arctificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants of the pla	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	1
In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the checked above. Spatial extent of altered soil: Recentness of significant soil alteration in wetland:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a compacted periods. The plants is graphic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. The plants is a compact point in the plants is some content of the plants is some content in the plants in the plants in the plants in the plants is some content in the plants in t	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	st 100 years or since wetland was created or restored (whichever we the "0"s" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	1
In the last column, place a check mark next to any item present is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the checked above. Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods, and in the particular periods are plants). In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In the wetland is particular periods and in the particular periods are present. In the wetland is likely to have erosion or stir bottom sediments. In the wetland is present amounts of topsoil im the particular periods are present. In the wetland is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, or otherwise a particular periods. In the wetland that is likely to have compacted, eroded, eroded	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	1

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-W-01

Date: 9 October 2019

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.188198, -66.187343

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.06	Lower	0.22	Lower	3.32	0.30
Stream Flow Support (SFS)	4.48	Moderate	3.28	Moderate	2.39	1.91
Water Cooling (WC)	2.92	Moderate	4.08	Moderate	1.94	2.46
Sediment Retention & Stabilisation (SR)	3.78	Moderate	10.00	Higher	5.74	10.00
Phosphorus Retention (PR)	4.09	Moderate	10.00	Higher	5.81	10.00
Nitrate Removal & Retention (NR)	2.28	Moderate	10.00	Higher	5.24	10.00
Carbon Sequestration (CS)	5.36	Moderate			6.87	
Organic Nutrient Export (OE)	4.43	Moderate			4.68	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	4.40	Moderate	2.84	Moderate	2.62	2.01
Aquatic Invertebrate Habitat (INV)	3.95	Moderate	6.43	Higher	5.26	4.71
Amphibian & Turtle Habitat (AM)	5.89	Moderate	7.08	Higher	6.41	6.39
Waterbird Feeding Habitat (WBF)	7.63	Higher	5.00	Moderate	6.07	5.00
Waterbird Nesting Habitat (WBN)	5.95	Higher	5.00	Moderate	5.08	5.00
Songbird, Raptor, & Mammal Habitat (SBM)	9.75	Higher	5.00	Moderate	8.08	5.00
Pollinator Habitat (POL)	9.16	Higher	10.00	Higher	7.38	10.00
Native Plant Habitat (PH)	7.05	Higher	10.00	Higher	5.93	10.00
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.00	Lower		2.20
Wetland Ecological Condition (EC)			4.94	Moderate		7.08
Wetland Stressors (STR) (higher score means more stress)			4.57	Moderate		3.94
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	4.48	Moderate	0.22	Lower	3.32	0.30
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.74	Moderate	10.00	Higher	6.39	10.00
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.21	Moderate	5.52	Higher	4.42	3.87
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	6.21	Moderate	5.53	Moderate	5.23	5.03
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.20	Higher	9.17	Higher	7.61	9.17
WETLAND CONDITION (EC)			4.94	Moderate		7.08
WETLAND RISK (average of Sensitivity & Stressors)			2.28	Lower		3.07
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	he wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PH-W-01
Investigator Name:	Matt Alexander
Date of Field Assessment:	20 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.202795
Longitude (decimal degrees):	66.187736
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	1.93
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	Catches runoff from Paddy's Hill and Paddy's Hill Road.

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spanial data oxists in a particular province.
		Prince Edward Island	0	1
		Newfoundland-Labrador	0	1
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
	ł	0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
	ł	1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	- 1	
		>100 hectares.	0	
	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	1	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
	ł	1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
F5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes.]	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
	ł	50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
	ł	0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	3	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estilianting the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
)F8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations)		in Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	· ·	IS.		
8		15. <5% of the land.	0	
8		s 65% of the land. 5 to 20% of the land.	0	
В		5 to 20% of the land.	0	
В		5 to 20% of the land. 20 to 60% of the land.	0	
8		5 to 20% of the land.	0	
	Type of Land Cover	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0	[AM, SBM]
9	Type of Land Cover Alteration	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 60 to 90% of the land. 500% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0	[AM, SBM]
		5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 1	[AM, SBM]
9	Alteration	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
	Alteration Distance by Road to	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Alteration	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is:	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
9	Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, diff or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route
9	Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 50 to 90% of the land. 500 to 90% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dift or gravel road, cropland, landside, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 1 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

			-	
OF11	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
	Walitalieu Rodu	<10 m.	0	use the George's Draw Line tool. [AW, FAV, FRV, INRV, FR, FU, SDW, STR, WDN]
		10 - 25 m.	1	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wellands layer in GeoNB (despite its omissions) to show surrounding wellands roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
0.10	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as w [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	-
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	- 1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (tull separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: 100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	1	
		1 -2 km.	0	
		2-5 km.	0	1
		5-10 km.	0	
05/-	7116	>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicher is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		0-10 km.	0	-
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the AA		
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the me
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Dat box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case: evees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas; or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i so infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.68	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	in Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= ves. 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality slandards. [AM, FA, FR, NR
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0]
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
		all wetlands in this region.		
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters	U	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Welland as a % of Its Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	Topographic maps may be viewed online at the National Allas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
OF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	1	
OF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the Ay) by the approximate area of its catchment excluding the area of the wetland (not just the Ay) by the approximate area of its catchment area. The result is: <0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.1 to 0.1.	0 1 0	
OF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a lopographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which eAA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result its: 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 1.01 to 0.1. 1.1 to 1. 1.1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise.	1 0 0	
	Contributing Area (Catchment)	Maters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or it using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland kiself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01 or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 1 to 1. 1 to 1. 1 to 1. The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 1 0	
OF22 OF23	Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or it using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its actionment excluding the area of the wetland great procedure and in the wetland great is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or calcibrhent size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. O.1 to 1. 1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise long).	0 1 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
	Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which eA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result its: d.0.11, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 1.1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:	0 1 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

Comparison of the present	OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
So you also has been engined. The source of the second of			indicated by the following: (a) input channel is present		
Section of the control of the cont			(b) input channels have been straightened,		
1					
Bind CAS be available ploated, test and racing what the high and contributes 1					
Rely In the Comment of the Comment o			(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
Somewhat traits. Compared to the contraction of			This statement is:		
Second Proceedings of the control from securities which is a second process subsection of many subsections of many subsectio			Mostly true.	0	
See a control for deviction of most under some risk in season, seek or an experiment plant with the seek of the season of the se			Somewhat true.	0	
Section (No. 1997) And security of the section of t			Mostly untrue.	1	
Some Service	OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
The EST No. Will be proposed as a process of the company of the co				0	
Section of Concession Proceedings Proceedings Procession Pro			11 7 0	0	
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Second and Proceedings of Secondary (1997) Seco	OF27	Growing Degree Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	
Property of page of control graphing control specified sequency of Adards among other productions of Specific Control (1997)	OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been chosen up NP, the list of sheeked waters in at
Append A of the Manual. Control call of the place special case in the "Inspiration combination combina				0	stocked. In NB, the list of stocked waters is at: http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked\
Security of the contained and separated and separated processes and proceedings concentration to make years and proceedings of the contained Alland's plant species and proceedings of the contained and procedings of the contained and proc					aters.html
summor other anatomous openiors or do and is protechly and consecuted by manufactories of Sproached by the control				0	[AM, FA, FR, INV, WBF, WBN]
Species of Conservative Within the past 10 years, in the AR (or in 5 adjoining waters or welland), qualified discoveres have documented privated and applicable approached from the Concentration of				U	
Section of Conservation White the part of by years in the Adj or this adjoining waters or welfund), qualified decreases have documented and applicability Experience of one or more of the plant species listed in the Plants, Pare worksheet of the Prosecut of one or more of the interpolation or repulles species (MM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the maniphalism or repulles species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of one or more of the melanguagesplant or repute species (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the configuration of the recting secure (SMM) of conservation concern as listed in the Wildlier, Rare worksheet of the Prosecut of the subject will be the excent of the subject will be the concernance of the subject will be a concernance of the subject will be the concernance of the subject will be the process of the subject will be the process of the subject will be the s				0	
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Procedure of one of make of the parts species leaded in the Parts, Year worknessed of the Scorphaphy Supprison Be, of the As a within a supprison of the Suppri		Concern			
scoropanying Supplied (le. Presented for one more of the advantage) species (SME), WEW) of conservation concern as Island in the Wildlie, Bare worksheet of the Presented for one more of the internal present plant of the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the accompanying Supplied (le. Aurity) their entering season (May July) for most species). 10 In the source of this layer, which should be checked periodically for updates, its May July of the accompanies the calculator, calcul				0	
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None of the above, or no data None of the above or n				0	
potente Bid Area BA Let T - yes, O - no. Sociogie Earth, open the KMZ file that accompanies this calculator, called Bax_Canada. The AA is all or part of an officially designated by the public of private BA Letter T - yes, O - no. BA Lett					
IN PACIFICATION OF THE CONSERVATION OF THE SAME (In that accompanies this calculator, called BioxDuck. Adjust is alignment and opacity. Determine the producted density (pairs per 25 sq. km) of nesting American Black Duck in the AAR's vicinity. 10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 30 (enter 3), 40 (0520	Investment Died Asse		1	The second state is a second by the second by the second s
predicted density (pairs per 25 sq. lm) of nesting American Black Duck in the AAS vicinity; <10 (enter 0), 10-20 (enter 2), 203 (enter 2), 203 (enter 3). It outside or legion shown in may change toblank. OF32 Wintering Deer or Moose off AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that connected by Concentration Areas. Protected Secretary 1997. In the Conservation of Notice Conservation of Notice (Inc.) In the Conservation Investment of Notice (Inc.) In the Conservation Internation Internat	UF30			U	
Sal Center 3), if Outside of region shown in map, change loblank. SBM	OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
Concentifation Areas accompanies this report called NB_DerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. OF34 Conservation Investment The AR is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or agencies for more recent information. OF35 Mitigation Investment The AR is all or part of a mitigation set used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change lablank (not 0). OF36 Sustained Scientific Use The AR is all or part of a mitigation set used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change lablank (not 0). OF36 Sustained Scientific Use The AR is part of a material than this been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change lablank. OF37 Calcareous Region The AR is part of a material than thas been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AR is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change lablank. OF38 Calcareous Region The AR is an area that is a lasts party undertain by sois accordance (refer 3 in next column), moderately calcareous (refer 2), or slightly calcareous (refer 3), none=0, Limestone is typically a major component (larst geology) and water is not additic (pH is susally >8). See Figure A 6 in Appendix A of the Manual. If no map coverage, change					
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D	ate: 20 Sept 2019	Site Identifier: PH-W-01	Investigator:	: Matt Alexand	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 μS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclua a dja lescri	ould also include part of a le the open water part adj cent " is used synonymo libed features along their a	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout its aform, usly with abutting, adjoining, bordering, contiguous and means no upland (mammade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form Diversity	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. It you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the
		coniferous trees (may include tamarack) taller than 3 m.	2	trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees taller than 3 m. coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	3	
<u>Vote</u> :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA. conferous, 1-9 cm diameter and >1 m tall.	1	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for minimum 5% canopy requirement in this question. The trees and shrubs need not be welland specie.
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	
		broad-leaved deciduous >40 cm diameter.	1	
6	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Eilher the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	1	
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	at least 2 m tall. [POL, SBM, WBN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1	
		Several (>8/hectare) but above not true.	0	
8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is:		Exclude temporary "burn piles." [AM, INV, POL, SBM]
8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is: Few or none that meet these criteria.	0	Exclude temporary "burn piles." [AM, INV, POL, SBM]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INVINING AIGAE OF INCIDENS. [F.A., F.K., INVV, INVV, OL., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F12	Ground Irregularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pils,	0	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
1 12	Ground irregularity	integrate the PAY without any wing registration. Executing the potention of the PAY material among some water, the fundamental minimum and purpose, so that are raised mountage and part and purpose, minimum and purpose, minimum and purpose, minimum and purpose, minimum and purpose and part and purpose and		The depressions may be of numer of natural origin. [PW, EG, INV, INI, FT, FGE, FK, 30W, 31, W3]
		Few or none (minimal microtopography: <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	
F12	Helendi I I	Several (extensive micro-topography).	1	TAM ND CDM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	many (e.g., wenand-upland mosaic, >10% of the vegetated AA). In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Joil Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[66] (11) 62] (11) (1) (30) (3) (3) (4)
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	1	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		······································
		None, or <100 sq. m.	0	
		100-1000 sq. m.	1	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	• • •
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	1	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or officers that take shown increase. It only
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F10	Dominance of March	>95% of the vegetated area.	0	For this question, include force on well as graminoids and facts. (FC IBM DL DOL C.)
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplint		[EC, PH, POL, Sens]
		invacing energies appear to be absent in the AA or are present only in trace amount (a favired siduals)	C	
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		unvasive species are present in more main trace amounts, but comprise <5% or neroaceous cover (or woody cover, it the invasives are woody).	•	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
E21	Invacino Conos Mari	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland unland boundary, the proceed of the welland adap (within 2 m uncland from the welland) that is occupied by invasive plant.	0	If a plant cannot be identified to species to a winter conditional but its account to
F21	Invasive Cover Along Upland Edge	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	5-	none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge.	0	
Egg	Eringo Mattend	most (>50%) of the upland edge.	0	TAMPE WITH WOOD
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	[WBF, WBN, WCv]
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.	L	· · · ·

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INM, NR, POL, PR, SBM, WBF, WBN]
	· · · · · · · · · · · · · · · · · · ·	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	1	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	water triat is straueu	<5% of the water is shaded, or no surface water is present then.	1	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	1	., .,,,
		0.5 - 1 m change. 1-2 m change.	0	-
		>2 m change.	0	
Is the /		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	1	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	-
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):	Ü	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	Proportions	One depth class that comprises 50-90% of the AA's inundated area.	1	
F04		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: 45% of the water, or it occupies <100 sg.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		5-30% of the water.	0	1
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	1
		30-70% of the ponded water. 70-99% of the ponded water.	0	4
		70-99% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is:	^	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		<1 m. 1 - 9 m.	0	,,,
		10 - 29 m.	0	1
		30 - 49 m.	0	
		50 - 100 m. > 100 m, or open water is absent at that time.	0	-
		During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Flat Shoreline Extent	slope less than about 5% measured within 5 m landward of the water) is:		that has such a gentle slope. [SR, WBN]
F35	Flat Shoreline Extent	<1% of the water edge.	0	mat nas such a gentie stope. [SK, WBN]
F35	Flat Shoreline Extent	<1% of the water edge. 1-25% of the water edge.	0	inal nas such a genile siope. [SK, WBN]
F35	Flat Shoreline Extent	<1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0	inat nas such a geniie siope. [SK, WBN]
F35	Flat Shoreline Extent	<1% of the water edge. 1-25% of the water edge.	0	inat nas such a genile siope. [SK, WBN]
F35	Flat Shoreline Extent Robust Emergents	<1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 50-75% of the water edge.	0 0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
		<1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 50-75% of the water edge. >57-5% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmiles</i>), or tall (>1m) bulrush is:	0 0 0	
		<1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 50-75% of the water edge. >75% of the water edge.	0 0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
		<1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 50-75% of the water edge. 575% of the water edge. 175% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattall (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter *1" and continue. If not, enter *0" and SKIP to F42 (Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA, Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.	ŭ	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
		TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	1	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.		
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	0	
F50	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	or Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evenence. Consult opposphism inspired better the early in super-essuation there. It was deposited associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		2 70 70; or an area within 50 in or the AM cage is office Welldius. SNIF to F33.	U	

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
D # 01		0	ND DD C CD I
Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies > 10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
	<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
	2-5%.	0	
	5-30%.	1	
		0	
Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, fatus slopes, stream banks, or excavated pris (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.		
			1
	Yes, but time of origin or expansion unknown.	0	
	Unknown if new or expanded within 20 years or not.	0	1
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	1
	Burned 6-10 years ago.	0	1
	Burned 11-30 years ago.	0]
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility	The maximum percentage of the wetland that is visible from the best vanlage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
	<25%.	0	
	25-50%.	0	
		1	TOLL AWAY
•	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
	Maintained roads, parking areas, or fool-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	1	
	Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
Unvisited Core Area			[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
			-
			1
	>95% of the AA with or without inhabited building nearby.	1	
Frequently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
rica	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
	5-50%.	0	
	50-95%.	0	
	>95% of the AA.	0	
BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter *1* if true.	0	[PH, PU]
BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boals, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0]
	Waterfowl hunting.	0]
	Fishing.	0	-
		0	
Domostic Walls		1	[NRv]
Domestic Wells			[tuve]
			-
		1	
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplinfo file for list of plant indicators	0	[PH, PR]
	(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Unvisited Core Area Erequently Visited Area BMP - Soils BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	Series or many time persions districted part of managed vegotiation, ag, learn, one crops, uneversed road, die, laminidie. The sheepest and many time persions districted part of the updated area that is, within 30 m of the AA edge in other westands. 25%.	Importious surface, e.g., pared road, parking Ist, building, exposed road. Builtin Stages Like or many time previous surface on immaged registation, e.g., bush rose crays, unproved road, disc, tendrische The Stages and the mode durated part of the years of the welfand and cocpies > 10% of that updared area has a porcord stope of the common of the welfand and cocpies > 10% of that updared area has a porcord stope of the common of the welfand and cocpies > 10% of that updared area has a porcord stope of the common of the common of the welfand and cocpies > 10% of that updared area has a porcord stope of the common of the co

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igator: Matt Alexander	Site Identifier: PH-W-01	U.	Date: 20 September 2019	
essor (S) Data Form for Non-Ti	idal Wetlands. WESP-AC for New Bi	runswick. Version 2.		Dat
Aberrant Timing of Water Inputs				Dat
	s likely to have caused the timing of water inputs (but not necessarily their	ryaluma) to shift by hours, days, or wasks, becoming either more	mutad (cmallar or lace fraquent peaks enread over langer time	
	lashy (larger or more frequent spikes but over shorter times). [FA, FR, IN\		muteu (smailer of less frequent peaks spreau over longer time.	
Stormwater from impervious surfaces that drains directly to t	ne wetland.			1
Water subsidies from wastewater effluent, septic system leaf	kage, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or of	her consumptive use.			
Flow regulation in tributaries or water level regulation in adjo	ining water body, or other control structure at water entry points that regu	lates inflow to the wetland.		
	nt from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, de	ead-end ditch.			
Artificial drains or ditches in or near the wetland.				(
	internal channel (incised below the historical water table level).			
Logging within the wetland.				
	sult of machinery, livestock, fire, drainage, or off road vehicles.			
Straightening, ditching, dredging, and/or lining of tributary ch		no mangurable offset on the timing of yeater conditions in any part of	of the AA then leave the "O's" for the season in the following round	
	ole below, assign points. However, if you believe the checked items had n ndition if the checked items never occurred or were no longer present.	o measurable effect on the liming of water conditions in any part o	il the AA, then leave the "US" for the scores in the following for	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began wit	hin past 10 years, and only for the part of the wetland that experiences th	ose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
		F	Sum=	
			Stressor subscore=	0
				U
Accelerated Inputs of Contaminants and	d/or Salts			0.
·		ne inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S]		0.
In the last column, place a check mark next to any item occ	urring in either the wetland or its CA that is likely to have accelerated th	Le inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S]		
In the last column, place a check mark next to any item - occ Stormwater or wastewater effluent (including failing septic sy	urring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities.		IR)	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				1
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last columnate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* high-intensity= extensive off-road vehicle use, plowing, grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
soil or sediment.			Julii-	
	sessment Area		Stressor subscore=	0.42
soll or sediment. Soil or Sediment Alteration Within the Ass. In the last column, place a check mark next to any item present in is less). (CS, INV, NR, PH, SR, STR)	the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa	Stressor subscore=	
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted by the compaction of the grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero if any items were checked above, then for each row of the table the effects, contrast the current condition with the condition if the che	the welland that is likely to have compacted, eroded, or otherwise a ntain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. elow, assign points. However, if you believe the checked items did rocked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0"s" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0.42
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present it is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero artificial water level or flow manipulations sufficient to cause ero if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise a ntain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. selow, assign points. However, if you believe the checked items did rocked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0"s" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	1 1 1 3 1 2

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PH-W-01

Date: 20 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.202795, 66.187736

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.		Ti and the second				
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	3.06	Moderate	1.63	Lower	4.09	1.70
Stream Flow Support (SFS)	2.55	Lower	7.19	Higher	1.36	4.19
Water Cooling (WC)	1.42	Lower	0.00	Lower	0.94	0.00
Sediment Retention & Stabilisation (SR)	2.03	Moderate	1.88	Lower	4.55	1.14
Phosphorus Retention (PR)	3.02	Moderate	4.55	Moderate	5.05	4.44
Nitrate Removal & Retention (NR)	2.21	Lower	7.19	Moderate	5.19	7.50
Carbon Sequestration (CS)	2.73	Lower			5.74	
Organic Nutrient Export (OE)	4.16	Moderate			4.54	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	2.53	Lower	5.04	Moderate	4.76	3.96
Amphibian & Turtle Habitat (AM)	5.80	Moderate	9.62	Higher	6.36	7.93
Waterbird Feeding Habitat (WBF)	7.36	Higher	10.00	Higher	5.86	10.00
Waterbird Nesting Habitat (WBN)	4.25	Moderate	10.00	Higher	3.63	10.00
Songbird, Raptor, & Mammal Habitat (SBM)	9.57	Higher	10.00	Higher	7.93	10.00
Pollinator Habitat (POL)	9.95	Higher	10.00	Higher	8.01	10.00
Native Plant Habitat (PH)	6.23	Higher	9.97	Higher	5.60	8.65
Public Use & Recognition (PU)			4.55	Moderate		3.57
Wetland Sensitivity (Sens)			5.56	Higher		3.87
Wetland Ecological Condition (EC)			4.94	Moderate		7.08
Wetland Stressors (STR) (higher score means more stress)			6.38	Higher		4.60
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.55	Moderate	1.63	Lower	4.09	1.70
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	2.72	Lower	5.86	Moderate	5.44	5.93
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	3.41	Lower	5.64	Higher	3.83	3.46
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	5.42	Moderate	7.96	Higher	4.77	7.79
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.26	Higher	9.99	Higher	7.59	9.77
WETLAND CONDITION (EC)			4.94	Moderate		7.08
WETLAND RISK (average of Sensitivity & Stressors)			5.97	Higher		4.24
	NOTE: A scor	e of 0 does not	maan tha funa	tion or honofit i	a abaant from t	an wetland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PH-W-02
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	14 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.202084
Longitude (decimal degrees):	-66.186590
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	8.7
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	50
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-ta-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
r i	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	1
		Newfoundland-Labrador	0	1
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Meass tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	1
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		>100 hectares.	1	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus albdjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		-50 m, and not separated from the 375-ha vegetated area by any width obaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped to the contains of the con	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grassilike plants in this use of "herbaceous vegetation"]	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estilianting the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AAI's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confler plantations is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	
		5 to 20% of the land.	0	1
			0	4
		20 to 60% of the land.		
		20 to 60% of the land. 60 to 90% of the land.	0	
9	Type of Land Cover	60 to 90% of the land.		[AM, SBM]
9	Type of Land Cover Alteration	60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
9		60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	[AM, SBM]
	Alteration	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, coniler plantation.		
9	Alteration Distance by Road to	60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	"Population center" means a settled area with more than about 5 regularly-inhabited structures p
	Alteration	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, coniler plantation.	1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. SKIP to OF10. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, coniler plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 1 1 0	"Population center" means a settlied area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., pawe droad, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confier plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m.	0 1 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m. 100 - 500 m.	0 1 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m. >500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and
01.12	VIIIdillo Fideess	separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		in Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km. and not separated by those readules.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km.	1	
		1 -2 km.	0	
		2-5 km.	0	
		5-10 km.	0	
OE15	Tidal Provimity	>10 km. The distance from the AA edge to the eleccettidal water body (regardless of its calinity) is:	0	In Congle Earth, measure the distance to the opens (including Day of Funds) or tidal the substitute of
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km. 1 - 5 km.	0	information if available may be preferable. [FA, WBF]
		5-10 km.	0	
		10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.	'	
OF17	Flood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (WSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	modeling. [1004]
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges.	0	
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then		IFA NR, Sens, SFSv, WCv, WSv/
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.70	
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Enter 2 = yes, 0 = no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
0.5		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AI may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Allas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1.	0	
OF23	Unvegetated Surface in	31 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised toog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots	U	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other payement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	g
		10 to 25%.	0	
		>25%.	0	

DF24		_		
	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
			0	
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		7. 7 5	1	
		Southward (S, SW), south-facing contributing area.		
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
		and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OÉ, PH, PR, Sens, SR, WBF, WCv, WS
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	l	nttp://www.z.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/its/vcontent/stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	n i i i i i i i i i i i i i i i i i i i
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
0.500		3 13 1		D 117 11 7 100D0 11 1 1 1
	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Suppinfo file.	U	
			0	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	0	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change to blank .		
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that		
			0	[SBM]
	Concentration Areas		0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	0	[SBM]
)E22		accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
	Other Conservation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	(SBM)
		accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
	Other Conservation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are		
	Other Conservation Designation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC ar agencies for more recent information.	0	[PU]
	Other Conservation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or		
	Other Conservation Designation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC ar agencies for more recent information.	0	[PU]
	Other Conservation Designation	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
OF34	Other Conservation Designation	accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tolank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no	0	[PU]
OF34	Other Conservation Designation Conservation Investment	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area - but also include if the AA is all or part of an area designated by government. First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC aragencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tiblank (not 0).	0	[PU]
OF34 OF35	Other Conservation Designation Conservation Investment Mitigation Investment	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC aragencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
OF34 OF35	Other Conservation Designation Conservation Investment Mitigation Investment	accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. Mith GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tablank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change tablank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-frends	0	[PU]
OF34 OF35	Other Conservation Designation Conservation Investment Mitigation Investment	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area – but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC aragencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
OF34 OF35 OF36	Other Conservation Designation Conservation Investment Miligation Investment Sustained Scientific Use	accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animas, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank.	0 0	[PU] [PU] [PU]
OF34 OF35 OF36	Other Conservation Designation Conservation Investment Mitigation Investment	accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change to blank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-frends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least parity underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	[PU] [PU] [PU] [FU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at
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Date: 14 October 2019 Site Identifier: PH-W-02 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require acidics soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Weltland surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bufush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA shi include " adja e descrii	ould also include part of a e the open water part adj cent " is used synonymo bed features along their a	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should facent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this dat form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
F2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1. B2.	0	
F3	Woody Height & Form Diversity	DZ. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetglale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
<u>Note</u> :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	0	[PH, POL, SBM, Sens]
	Species	those species together do not comprise > 50% of such cover.	1	
F5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for the minimum 5% canopy requirement in this question. The trees and shrubs need not be welland species. [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 1-9 cm diameter and >1 m tall.	1	
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	
		broad-leaved deciduous >40 cm diameter.	0	
F6	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	1	
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
		B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0	
F7	Large Snags (Dead Standing Trees)	The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	_	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
		None, or tewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
		Several (>8/hectare) but above not true.	1	
F8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is:		Exclude temporary "burn piles." [AM, INV, POL, SBM]
		Few or none that meet these criteria.	0	
		Several (>5 if AA is >5 hectares, less for smaller AAs) meet these criteria.	- 1	

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FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		Do not include Nitking aigae of lichens. [FA, FR, HVV, HVV, OE, FH, Sbin, Sens]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	1
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate. Several (extensive micro-topography).	0	1
F13	Upland Inclusions	Several (extensive micro-lopography). Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	opianu inclusions	Few or none.	1	
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	0	1
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	1
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ŭ	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	- 1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	1
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.	0	-
		>95% of the vegetated part of the AA.	0	1
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	-
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
	Scage cover	Scages (carea spe), and contingues (<i>Engineral a spe)</i> , occapy. <5% of the vegelated area, or none.	0	
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file.	_	
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		invasive species are present in more man trace amounts, but comprise <5% or nerbaceous cover (or woody cover, it the invasives are woody).	1	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0]
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
F24	Investus Carres Al	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	If a plant connet he identified to energy /
F21	Invasive Cover Along Upland Edge	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge	·	0	species cannot be identified, answer "none". [PH, STR]
	Upland Edge	none of the upland edge (invasives apparently absent), or AA has no upland edge.		
	Upland Edge	some (but <5%) of the upland edge.	1	
	Upland Edge	some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
F22		some (but <5%) of the upland edge. 5-50% of the upland edge. most (>50%) of the upland edge.	0	IWBF WBN WCJI
F22	Upland Edge Fringe Wetland	some (but <5%) of the upland edge. 5-50% of the upland edge.	0	[WBF, WBN, WCv]
F22		some (but <5%) of the upland edge. 5.50% of the upland edge. most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv] [FR, PR, PU, WBF, WBN]

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		The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	1
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water. 75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
ı	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonfiles, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA. 20-50% of the AA.	0	
		50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	(51, 110)
	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	1	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	1	.,,,
		0.5 - 1 m change. 1-2 m change.	0	-
		>2 m change.	0	1
Is the A		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and
	Class	AA, is:	1	safety allow, depths may be measured by drilling through winter ice. This question is asking about the spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		<10 cm deep (but >0). 10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	, , , , , , , , , , , , , , , , , , , ,
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of		0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water. 30-70% of the water.	0	
		70-95% of the water.	0	1
		>95% of the water.	0	
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, if false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	1	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	орон	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	1	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	-
		30-70% of the ponded water. 70-99% of the ponded water.	0	1
		100% of the ponded water.	0	1
	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
			U	
		1 - 9 m.	0	
		10 - 29 m.	0	
		10 - 29 m. 30 - 49 m.	0	
		10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0	
	Flat Shoreline Extent	10 - 29 m. 30 - 49 m.	0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Flat Shoreline Extent	10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	0 0 0 0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
	Flat Shoreline Extent	10 - 29 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0	
	Flat Shoreline Extent	10 - 29 m. 30 - 49 m. 50 - 100 m. 50 - 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0	
	Flat Shoreline Extent	10 - 29 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0	
F35		10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 50-75% of the water edge.	0 0 0 0	that has such a gentle slope. [SR, WBN]
F35	Flat Shoreline Extent Robust Emergents	10 - 29 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. 50 - 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-255 % of the water edge. 50-75% of the water edge.	0 0 0 0	
F35		10 - 29 m. 30 - 49 m. 50 - 100 m. 50 - 100 m. 50 - 100 m. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 50-50% of the water edge. 50-75% of the water edge. 75% of the water edge. 75% of the water edge. 75% of the water edge. 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	0 0 0 0 0 0 0 0 0	that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35		10 - 29 m. 30 - 49 m. 50 - 100	0 0 0 0 0 0 0 0	that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose slems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pagi, 174, 115, 1154]
E10		Extensive.	0	Survey
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" dlich,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F.1.1	T. 1. O	drain the wetland artificially, or water is pumped out of the AA.		If in the state of the AA fellows
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		-
		Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1". Neither of above	0	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
	0 1	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, CB, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	prong accume suring early writes. [vwn, co.; r.v., r.v., IIV, IWK, UE, FTI, FTV, 5F5, WC, W5]
		Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:	_	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note f	or the next three guest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
	nt. In many situations, th	notis. In the Art acks and uplante edge, evaluate based on the Arts entire perminener, and intolving document into whatever areas are nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the Arts edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		r rore; or an area area minim ou in orine ray eage to other mentalities. OMF 10 1 33.	J	Į

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in buller			, , , , , , , , , , , , , , , , , , , ,
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	1	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
		that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	0	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	1	
		25-50%.	0	
		>50%.	0	
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	rotential	water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	Onvision Coronica	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		, , , , , , , , , , , , , , , , , , , ,
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	0	1
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pels, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0]
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
,				(DLL DD)
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying SuppInfo file for list of plant indicators	0	[PH, PR]

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	Site Identifier: PH-W-02		ate: 14 October 2019				
essor (S) Data Form for Non-Tidal	Watlands WESP-AC for New B	runswick Version 2					
	Wettands. WEST -AS for New B	Turiswick. Version 2.					
Aberrant Timing of Water Inputs							
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time:				
Stormwater from impervious surfaces that drains directly to the wetla							
Water subsidies from wastewater effluent, septic system leakage, sn	now storage areas, or irrigation.						
Regular removal of surface or groundwater for irrigation or other con	isumptive use.						
Flow regulation in tributaries or water level regulation in adjoining water body, or other control structure at water entry points that regulates inflow to the wetland. Adam dike levels were still, within or developed from the wetland, that interfaces with surface or subscripting flow inflowed to the wetland.							
A dam, dike, levee, weir, berm, or fill within or downgradient from the wetland that interferes with surface or subsurface flow in/out of the AA (e.g., road fill, wellpads, pipelines). Excavation within the wetland. e.g., duoout, artificial pond, dead-end ditch.							
Excavation within the wetland, e.g., dugout, artificial pond, dead-end ditch.							
Artificial drains or ditches in or near the wetland.							
Accelerated downcutting or channelization of an adjacent or internal channel (incised below the historical water table level). Logging within the wetland.							
Logging within the wetland. Subsidence or compaction of the wetland's substrate as a result of machinery, livestock, fire, drainage, or off road vehicles.							
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "Os" for the scores in the following row							
If any items were checked above, then for each row of the table below To estimate effects, contrast the current condition with the condition it		no measurable effect on the timing of water conditions in any part of	the AA, then leave the "U's" for the scores in the following rov				
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.				
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.				
Score the following 2 rows only if the altered inputs began within past	10 years, and only for the part of the wetland that experiences the	hose.					
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.				
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.				
			Sum=				
			6: 1				
Accelerated Inputs of Contaminants and/or \$ In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow stora	n either the welland or its CA that is likely to have accelerated the landfills, industrial facilities.						
In the last column, place a check mark next to any item occurring in	n either the welland or its CA that is likely to have accelerated the landfills, industrial facilities.		TR]				
In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow stora	n either the welland or its CA that is likely to have accelerated the landfills, industrial facilities.		TR]				
In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storal npri/default.asp?lang=En&n=B85A1846-1	n either the welland or its CA that is likely to have accelerated the landfills, industrial facilities. Ige areas, oil/ gas extraction, other sources (download many local		TR]				
In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storan pri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or If any items were checked above, then for each row of the table below	n either the welland or its CA — that is likely to have accelerated the landfills, industrial facilities. Ige areas, oil/ gas extraction, other sources (download many local or other areas in the CA. W. assign points. However, if you believe the checked items did not the checked items did not the checked items did not the checked items.	tions from National Pollutant Release Inventory and view KMZ over	rlay in Google Earth. https://www.ec.gc.ca/inrp-				
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In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storal npri/default asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or If any items were checked above, then for each row of the lable below following rows. To estimate effects, contrast the current condition with	n either the welland or its CA that is likely to have accelerated the landfills, industrial facilities. Ige areas, oil/ gas extraction, other sources (download many local or other areas in the CA. In the condition if the checked items never occurred or were no long severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over	ray in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the				
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	in the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.	· · · · · · · · · · · · · · · · · · ·		
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
			Stressor subscore=	U.
	sessment Area In the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.0
In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		U.I
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PH-W-02

Date: 14 October 2019 Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.202084, -66.186590

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were

oonputou.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.90	Moderate	1.68	Lower	3.96	1.75
Stream Flow Support (SFS)	4.79	Moderate	7.50	Higher	2.56	4.37
Water Cooling (WC)	8.25	Higher	5.29	Higher	5.50	3.18
Sediment Retention & Stabilisation (SR)	3.74	Moderate	1.29	Lower	5.71	0.79
Phosphorus Retention (PR)	3.04	Moderate	0.78	Lower	5.06	1.04
Nitrate Removal & Retention (NR)	2.31	Moderate	3.81	Moderate	5.26	4.50
Carbon Sequestration (CS)	6.54	Higher			7.38	
Organic Nutrient Export (OE)	9.52	Higher			7.38	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	3.84	Moderate	4.16	Moderate	5.22	3.48
Amphibian & Turtle Habitat (AM)	5.60	Moderate	4.45	Moderate	6.26	4.79
Waterbird Feeding Habitat (WBF)	4.99	Moderate	2.50	Moderate	3.97	2.50
Waterbird Nesting Habitat (WBN)	3.25	Moderate	2.50	Moderate	2.77	2.50
Songbird, Raptor, & Mammal Habitat (SBM)	9.53	Higher	2.50	Lower	7.90	2.50
Pollinator Habitat (POL)	10.00	Higher	0.00	Lower	8.83	0.00
Native Plant Habitat (PH)	7.50	Higher	6.43	Higher	6.11	5.58
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.00	Lower		2.11
Wetland Ecological Condition (EC)			6.39	Moderate		7.92
Wetland Stressors (STR) (higher score means more stress)			4.52	Moderate		3.92
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	4.79	Moderate	1.68	Lower	3.96	1.75
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.38	Moderate	2.89	Lower	6.62	3.30
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	8.06	Higher	6.57	Higher	6.27	4.02
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	4.18	Moderate	3.17	Moderate	4.43	3.38
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.51	Higher	4.70	Moderate	8.22	4.14
WETLAND CONDITION (EC)			6.39	Moderate		7.92
WETLAND RISK (average of Sensitivity & Stressors)			2.26	Lower		3.02
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	he wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-01
Investigator Name:	Matt Alexander
Date of Field Assessment:	19 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.172159
Longitude (decimal degrees):	66.20506
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.61
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
DF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including road >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares. >100 hectares.	0	4
)F3	Ponded Water &	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
,, ,	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	4
		0.01 - 0.1 hectare. 0.1 - 1 hectare.	0	1
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	1
F4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,	۱	See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	1
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0]
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
DF5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		-50 m, and not separated from the 375-ha vegetated area by any width obpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.]	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
)F6	Herbaceous Uniqueness	None of the above (the closest patches or corridors which are that large are >5 km away). The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing
5. 0	TO THE STATE OF TH	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter 1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffer of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PH POLv, SBMv, WBFv, WBNv]
)F7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [*NOTE: woody cover = trees & shrubs taller than 1 m.]	0	See above. Do not consider conlifer plantalions to be forest if it is obvious that trees were planted in rows. [AMW, PHV, POLv, SBMV]
F8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations, is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysi of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	1
		5 to 20% of the land.	0	1
		20 to 60% of the land.	0	
		60 to 90% of the land.	0	
		>90% of the land. SKIP to OF10.	1	
	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
OF9	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	1
JF Y		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
IFY				"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		
	Nearest Population		n	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
		<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
	Nearest Population	<100 m. 100 - 500 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
	Nearest Population	<100 m.		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to

OF11	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. use the GeoNB's Draw Line tool. [AM, FAV, FRV, NRV, PH, PU, SBM, STR, WBN]
	ividii italii eu Rodu	<10 m.	0	use the geolog's Draw Line (uoi. [Alw, FAV, FRV, NRV, PH, PU, SDM, STR, WDN]
		10 - 25 m.	1	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	-
		>500 m.	0	1
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
0.10	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as wi [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	1
		0.5 - 1 km, and not separated.	0	1
		0.5 - 1 km, but separated by those features.	- 1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: 4100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m · 1 km.	0	1
		1-2 km.	0	†
		2-5 km.	- 1	
		5-10 km.	0	
05/-		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicher is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	-
		10-40 km	0	1
		>40 km.	0	1
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA		
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	_
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wellands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wellands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the me
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Dat box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, (MSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases tevees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas pr no such mapping has been done locality, and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructur e vulnerable	1	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-mini).	0.18	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	1
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	†
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	V	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		0.1 to 1.	0	1
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise	0	1
OF23	Unvegetated Surface in	bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lob		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	
		10 to 25%. > 25%.	0	1
		223%.	U	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(a) land cover is mostly non-iorest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		This section is.		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OFAE	A	-		[AM ND CEC MC MC]
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	0	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	1	
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
0.20	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	,	<10 m.	0	
		10 - 50 m.	0	
		50 - 100 m.	- 1	
		100 - 1000 m.	0	
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Dogroo Dave	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL GrowingDegreeDays. Place your cursor over the AA	Ů	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
UF21	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PET_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	Inis layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
0555	F. I. A.	1.1.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	1	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	,, ,,,
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	Ů	
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation			Request information from ACCDC and/or conduct your own survey at an appropriate season using a
UF29	Concern	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	Concern			WBNv)
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WDW)
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	black back Nesting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	·	This was provided by Dr. David Ecske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				(ana)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
			L	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are		
		agencies for more recent information.	L	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change the lank (not		
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
	330	the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	1	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
OE27	Calcaroous Posion	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	_	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		mater to the control (p. 1. to account years of a paper train of the Manual. If no map coverage, change wealth.		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere		
		conditions.	L	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
				1
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Da	ite: 19 Sept 2019	Site Identifier: PLE-W-01	Investigator:	: Matt Alexan	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador lea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of a e the open water part ad, cent " is used synonymo, bed features along their a	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should fjacent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout this aform, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	1	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	# >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be *B1*. [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 1	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees. deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3 1	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
Note :	If none of top 4 rows in	deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation. F3 was marked 2 or greater, SKIP to F9 (N fixers).	1	
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter Classes	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise > 5% of the woody canopy cover in the AA or > 5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		conferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
6	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are
	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	at least 2 m tall. [POL, SBM, WBN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
		Several (>8/hectare) but above not true.	- 1	
8	Downed Wood	,	1	Exclude temporary "burn piles." [AM. INV. POL. SRM]
8	Downed Wood	Several variectaery out above non tude. The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is: Few or none that meet these criteria.	0	Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE NATIONAL BASE OF INCIDENTS. [F.A., F.N., 1000, 1000, 1000, 3000, 3000, 3000]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate. Several (extensive micro-topography).	0	
F13	Upland Inclusions	Several (extensive micro-topograpny). Within the AA, inclusions of upland are:		[AM, NR, SBM]
	,	Few or none.	0	•
		Intermediate (1 - 10% of vegetated part of the AA).	1	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarrest includes send teamy and gravet solbtle soils that do not make a ribbon when maintened relied sources of and extended	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	U	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m. 100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetaled part of the AA. 50-95% of the vegetaled part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
1 10	Sauge Cover			[oo]
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	
		5-50% of the vegetated area. 50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
		aquatic plants). Then choose one of the following:		
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
E20	Investor Div. 10		_ ŭ	IEC DU DOL Cond
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	1	
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 3-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	aparate and so demined, district fields. [i 11, 2114]
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23		a normal year.		

FieldF form - Non-tidal Page 2 of 5

F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or trainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest limes of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA. 20-50% of the AA.	0	
		50-95% of the AA.	0	
F0/		>95% of the AA. True for many fringe wetlands.	0	IEA MOI
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	1	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F07	00.000	>75% of the water is shaded.	0	
F27	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA. or <1% but >0.01 ha.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA. >95% of the AA.	0	
F28	Annual Water	>95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	1	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		10 cm - 50 cm change.	1	PR, SR, WBN, WS]
		0.5 - 1 m change. 1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	1	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes - Evenness of	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV, WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	, , , , , ,
		Neither of above. There are 3 or more depth classes and none occupy >50%.	1	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.		
		E 200/ of the water	0	
		5-30% of the water. 30-70% of the water.	0 0	
F32		30-70% of the water. 70-95% of the water.	0	
	Ponded Open Water - Minimum Size	30-70% of the water.	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	Minimum Size % of Ponded Water	30-70% of the water. 70-95% of the water. >95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0 0 0	
	Minimum Size	30-70% of the water. 70-95% of the water. >955% of the water. >955% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0 0 0	on the water surface or entirely submersed beneath it.
	Minimum Size % of Ponded Water	30-70% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it.
	Minimum Size % of Ponded Water	30-70% of the water. 70-95% of the water. 70-95% of the water. 955% of the water. 955% of the water. 955% of the water. 956% of the water. 957% of the water. 958% of the water. 959% of the water. 959% of the water of the proving season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). 959% of the water. 959% of t	0 0 0 1 0	on the water surface or entirely submersed beneath it.
	Minimum Size % of Ponded Water	30-70% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	Minimum Size % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 80-80 the water	0 0 0 1 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33	Minimum Šize % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 95% of the water. 10 wind proving season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water.	0 0 0 1 0 0	on the water surface or entirely submersed beneath it.
F33	Minimum Size % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 955% of the water. 955% of the water. 955% of the water. 955% of the water. 956% of the water. 10 wind proving season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: 10 None, or "1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 11 - 4% of the ponded water. 10 - 5/30% of the ponded water. 11 - 5/30% of the ponded water. 12 - 5/30% of the ponded water. 13 - 5/30% of the ponded water. 14 - 5/30% of the ponded water. 15/30% of the ponded water. 16 - 5/30% of the ponded water. 17 - 5/30% of the ponded water. 18 - 5/30% of the ponded water. 19 - 5/30% of the ponded water. 19 - 5/30% of the ponded water. 20 - 5/30% of the ponded water. 20 - 5/30% of the ponded water. 20 - 5/30% of the ponded water.	0 0 0 1 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
F33	Minimum Šize % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 905% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 1 - 9 m.	0 0 0 1 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F33	Minimum Šize % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 95% of the ponded water. 95% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 95% of the ponded water.	0 0 0 1 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F33	Minimum Šize % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded solve. 1 In the during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 In the during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 In the AB that separates are the average width of vegetated area in the AB that separates are the average width of vegetated area in the AB that separates are the AB that separates are the average width of vegetated area in the AB that separates are the AB t	0 0 0 1 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	Minimum Size % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 9 m. 10 29 m. 30 - 49 m. 50 - 100 m. or open water is absent at that time.	0 0 0 1 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F33	Minimum Šize % of Ponded Water that is Open	30-70% of the water. 70-95% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded solve. 1 In the during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 In the during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 In the AB that separates are the average width of vegetated area in the AB that separates are the average width of vegetated area in the AB that separates are the AB that separates are the average width of vegetated area in the AB that separates are the AB t	0 0 0 1 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	Minimum Šize % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Fater "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 10 by 10 m growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 n 9 m. 10 - 9 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	Minimum Šize % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 955% of the water w	0 0 0 1 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	Minimum Šize % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If fatse, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (tacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 11 - 9 m. 10 - 29 m. 10 - 49 m. 50 - 100 m. 10	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F33	Minimum Size % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 905% of the water dependence of the ponded water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: 4.7% of the water edge. 25-50% of the water edge. 5-50% of the water edge. 5-75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	Minimum Šize % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If fatse, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (tacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 11 - 9 m. 10 - 29 m. 10 - 49 m. 50 - 100 m. 10	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F33	Minimum Size % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopty) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 10 m, or open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 7-50% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F33	Minimum Size % of Ponded Water that is Open Width of Vegetated Zone within Wetland	30-70% of the water. 70-95% of the water. 70-95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 11 the me during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 10 - 29 m. 50 - 100 m. 50	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:	0	wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[
F40	Isolated Island	Extensive. The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on	0	[WBN]
		all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	Ü	
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement). No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland,	1	
E42	Outflow Confin	ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	1	*Major prooff overte* would include his-statistic materials at the second of the second overtex and the second overtex at the second over the
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography)	0	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		that does not appear to drain the wetland artificially during most of the growing season.		
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or take further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[wcv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairty straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
TEO.	Croundy-t C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult logorgaphic maps to detect breaks in Jospe described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE 2	Internal Cradinat	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charoline clane. It is the almost a difference between the second
F51	Internal Gradient	The gradient along most of the flow path within the AA is: <8 or the AA has no surface water outlet (not even seasonally).	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% of the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
	nt. In many situations, th	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m talerally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		, , , ,,,,, son, son, son, son, the
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	1	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or cover at Banci	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	0	-
		3-30%. >30%.	0	-
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Ciliis of Steep Banks	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		portion mende dynamica arees as potential activistics. It OE, Solmj
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	1	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	1
		Burned 6-10 years ago.	0	-
		Burned 11-30 years ago.	0	
F0.	V (1-11-11)	Burned >30 years ago, or no evidence of a burn and no data.	1	[DL CTD WDF.]
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	0	
		25-50%.	0	
Ε0	NI	>50%.	1	[DLI CTD]
	Non-consumptive Uses - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	1	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Nate: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the welland is visible from the trails and they are within 30 m of the weltand edge. In that case include only the area occupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	1	
		5-50% and inhabited building is within 100 m of the AA.	0	-
		50-95%, with or without inhabited building nearby.	0	
61	Eroguanthy Violtad	>95% of the AA with or without inhabited building nearby.	0	TAM DIL DIL COM CTD MIDE MIDNI
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	0	
		5-50%.	1	
		50-95%.	0	-
62	BMP - Soils	>95% of the AA. Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Low-impact commercial umber narvest (e.g., selective minning). Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	1
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	
		>500 m. away, or no information.	1	
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplinfo file for list of plant indicators	0	[PH, PR]

FieldF form - Non-tidal Page 5 of 5

Aberrant Timing of Water Inputs in the iss colourn place a check man near to any leven that is likely to have caused the lining of water issues (but not necessarily their volume) to shift by hours, days, or weeks, becoming either now more lemporal horsepoils of laws or water levely a more leaving of horsepoils of likely and weeks (are more lemporal place) of share facilities. The volume) to shift by hours, days, or weeks, becoming either now more lemporal promose places that distinct control is likely to the velocity. Water substities from improvous surfaces that distinct distinctives or water level regulation in blackers in or an active of surface or groundwater for implace or other control structure at water entry points that regulates inflow to the weekland. A dam, discolores one, become off ill—with or downgroader from the velocity. Exception within the welland, e.g., diagram, untificial point, dead end disch. Anticid arises or disches in or nor the welland. A dam, discolores one, become off ill—withing or districtive and water entry points that regulates inflow to the welland. Exception within the welland, e.g., diagram, untificial point, dead end disch. Anticid arises or disches in or nor the welland. Exception within the welland is good in the welland of a discolor or internal channel (include below the helotrical water table level). Logging within the welland. Scheddence or compaction of the welland is an a result of machinery, livestick, fine, drainage, or off road vehicles. Straighnering, disching, dredging, sonder linking of tributary channels. Faray items were checked above. The first each raw of the label below, assign points, However, if you below the checked liters had no measurable effect on the litting of water conditions in any your face strained effects, dead of the liming shift welland the little points of the liming shift welland the little points and the little points and the little points with the welland. Secon the labelway 2 rows only if the altered leyach began within pos	
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Frequency & duration of input: AA proximity to main sources (actual or potential): 0 - 15 m. 15-100 m. or in groundwater. Accelerated Inputs of Nutrients In the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	Low density residential.
AA proximity to main sources (actual or potential): 0 - 15 m. 15-100 m. or in groundwater. Accelerated Inputs of Nutrients In the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	Infrequent & during high runoff events mainly.
In the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	In more distant part of contributing area.
in the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	Sum=
in the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	Stressor subscore=
in the last column, place a check mark next to any item occurring in either the wetland or its CA that is likely to have accelerated the inputs of nutrients to the wetland. [NRv, PRv, STR]	
Stormwater or wastewater emuerit (including railing septic systems), randinis.	
Eartilizare applied to lawne, an lande, or other gross in the CA	
Fertilizers applied to lawns, ag lands, or other areas in the CA. Livestock, dogs.	
Artificial drainage of upslope lands.	
If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items did not cumulatively expose the AA to significantly more nutrients, the	
effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.	ave the "O's" for the scores in the following rows. To estimate
Severe (3 points) Medium (2 points)	ave the "O's" for the scores in the following rows. To estimate
Type of loading: High density of unmaintained septic, some types of industrial Moderate density septic, cropland, secondary wastewater	ave the "O's" for the scores in the following rows. To estimate Mild (1 point)
Sources. treatment plant.	· · ·
Frequency & duration of input: Frequent and year-round. Frequent but mostly seasonal. AA proximity to main sources (actual or potential): 0 - 15 m. 15-100 m. or in groundwater.	Mild (1 point) Livestock, pets, low density residential.
AA proximity to main sources (actual or potential): 0 - 15 m. 15-100 m. or in groundwater.	Mild (1 point) Livestock, pets, low density residential. Infrequent & during high runoff events mainly.
	Mild (1 point) Livestock, pets, low density residential.

FieldS form Non-tidal 1

Excessive Sediment Loading from Contribut	ting Area									
In the last column, place a check mark next to any item present in the	CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV, I	PH, SRv, STR]							
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation	clearing, fires.									
Erosion from construction, in-channel machinery in the CA.										
Erosion from off-road vehicles in the CA.				1						
Erosion from livestock or foot traffic in the CA.										
Stormwater or wastewater effluent.										
ediment from road sanding, gravel mining, other mining, oil/ gas extraction.										
Accelerated channel downcutting or headcutting of tributaries due to	altered land use.									
Other human-related disturbances within the CA.										
If any items were checked above, then for each row of the table below then leave the "O's" for the scores in the following rows. To estimate e			add significantly more sediment or suspended solids to the AA,							
	Severe (3 points)	Medium (2 points)	Mild (1 point)							
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	1						
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	3						
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	3						
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3						
* high-intensity= extensive off-road vehicle use, plowing, grading, exc soil or sediment.	avalion, erosion with or without veg removal; low -intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	10						
soil or sediment.		removal only with little or no apparent erosion or disturbance of	Sum= Stressor subscore=							
soil or sediment. Soil or Sediment Alteration Within the Asses In the last column, place a check mark next to any item present in the is less). [CS, INV, NR, PH, SR, STR]	esment Area welland that is likely to have compacted, eroded, or otherwise a		Stressor subscore=							
Soil or Sediment Alteration Within the Asses In the last column, place a check mark next to any Item present in the is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mountail	esment Area welland that is likely to have compacted, eroded, or otherwise a		Stressor subscore=	0.8						
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-01

Date: 19 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.172159, 66.20506

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	8.29	Higher	0.37	Lower	8.10	0.45
Stream Flow Support (SFS)	0.00	Lower	0.00	Lower	0.00	0.00
Water Cooling (WC)	2.00	Moderate	0.00	Lower	1.33	0.00
Sediment Retention & Stabilisation (SR)	10.00	Higher	1.74	Lower	10.00	1.06
Phosphorus Retention (PR)	10.00	Higher	4.55	Moderate	10.00	4.44
Nitrate Removal & Retention (NR)	10.00	Higher	3.75	Moderate	10.00	4.44
Carbon Sequestration (CS)	3.57	Moderate			6.10	
Organic Nutrient Export (OE)	1.20	Lower			2.97	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	1.16	Lower	4.16	Moderate	4.28	3.49
Amphibian & Turtle Habitat (AM)	5.24	Moderate	5.77	Moderate	6.07	5.59
Waterbird Feeding Habitat (WBF)	5.23	Moderate	5.00	Moderate	4.16	5.00
Waterbird Nesting Habitat (WBN)	3.61	Moderate	5.00	Moderate	3.09	5.00
Songbird, Raptor, & Mammal Habitat (SBM)	9.19	Higher	5.00	Moderate	7.62	5.00
Pollinator Habitat (POL)	9.58	Higher	0.00	Lower	7.71	0.00
Native Plant Habitat (PH)	4.97	Moderate	5.89	Moderate	5.09	5.11
Public Use & Recognition (PU)			3.07	Moderate		2.51
Wetland Sensitivity (Sens)			2.21	Lower		2.87
Wetland Ecological Condition (EC)			3.98	Moderate		6.53
Wetland Stressors (STR) (higher score means more stress)			8.23	Higher		5.28
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	0.00	Lower	0.37	Lower	8.10	0.45
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	10.00	Higher	3.95	Lower	9.51	3.88
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	1.55	Lower	2.77	Moderate	3.21	2.33
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	4.03	Moderate	4.46	Moderate	4.37	4.36
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.74	Higher	4.76	Moderate	7.26	4.24
WETLAND CONDITION (EC)			3.98	Moderate		6.53
WETLAND RISK (average of Sensitivity & Stressors)			5.22	Higher		4.07
	NOTE: A coor	e of 0 does not	moon the fune	tion or honofit i	a abaant from t	ho wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-03
Investigator Name:	Matt Alexander
Date of Field Assessment:	19 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.163275
Longitude (decimal degrees):	66.199397
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.54
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	90
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

vestigator: Matt Alexander

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-apps/apps-e-asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
		New Brunswick	- 1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which n spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including road >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) with 1 km is:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include on the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		>100 hectares.	- 1	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Ser
	Corridor	<0.01 hectare (about 10 m x 10 m).	- 1	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		450 m, and not separated from the 375-ha vegetated area by any width opawed roads, stretches of open water, row crops, bare ground, lawm, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscap.]	1 es.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
,		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation".	. 0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewleral imagery in Google Earth after successively drawing or estimating the boundaries of the buff of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can in drawn in Google Earth Pro by clicking on the Ruler Icon, then Circle in the pop-up menu. [AMv., P. POLv., SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted i
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	ocal Vegetated Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining ar that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations		in Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage	is:		
8	-	is: <5% of the land.	0	
8	-	is:	0	
8	-	Is: -5% of the land. 50 20% of the land. 20 to 60% of the land.		
8	-	Is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0	
		IS: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land90% of the land.	0	
	Type of Land Cover	Is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0	[AM, SBM]
		Is: -5% of the land. 5 to 20% of the land. 20 to 66% of the land. 60 to 90% of the land. -90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0	[AM, SBM]
	Type of Land Cover	s: -5% of the land. 5 to 20% of the land. 2 to 6.0% of the land. 20 to 6.0% of the land. 60 to 9.0% of the land. 500% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0	[AM, SBM]
9	Type of Land Cover	Is: -5% of the land. 5 to 20% of the land. 20 to 66% of the land. 60 to 90% of the land. -90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 1	
9	Type of Land Cover Alteration Distance by Road to Nearest Population	is: -5% of the land. 50 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 60 to 90% of the land. 60 to 90% of the land. Within the Skm radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantalion. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures pe square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the
F10	Type of Land Cover Alteration Distance by Road to	is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 60 to 90% of the land. 80 the land.	0 0 0 1 0 0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures persquare kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool's Freehand Line to draw and measure the route to
9	Type of Land Cover Alteration Distance by Road to Nearest Population	s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 80 to 90%	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
9	Type of Land Cover Alteration Distance by Road to Nearest Population	is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 60 to 90% of the land. 80 the land.	0 0 0 1 0 0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures persquare kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool's Freehand Line to draw and measure the route to

OF11	Distance to Massact	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O		
OFII	Distance to Nearest Maintained Road	From the center of the AA, the distance to the hearest maintained public road (dirt or paved) is:		use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]		
		<10 m.	0			
		10 - 25 m.	- 1			
		25 - 50 m.	0			
		50 - 100 m.	0			
		100 - 500 m.	0			
0512	IARI-HIE- A	>500 m.	0	In AID could be Welled I have to Co-AID (documents) to the company of the country		
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. (AM, SBM, STR)		
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and		
	ustance to Ponded Water			wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well.		
		<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]		
		<50 m, but completely separated by those features.	0			
		50-500 m, and not separated.	0			
		50-500 m, but separated by those features.	0			
		0.5 - 1 km, and not separated.	1			
		0.5 - 1 km, but separated by those features.	0			
		None of the above (the closest patches or corridors that large are >1 km away).	0			
OF14	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]		
	Ponded Water	than 8 hectares during most of a normal year is:				
		<100 m.	0			
		100 m - 1 km.	0			
		1 -2 km.	0			
		2-5 km.	- 1			
		5-10 km.	0			
		>10 km.	0			
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever		
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local		
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]		
		1 - 5 km.	0	1		
		5-10 km.	0			
		10-40 km.	0			
		>40 km.	0			
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]		
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0			
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA				
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0			
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1			
	Flood Damage from Non	Within 5 km downstream or downstope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu		
OF17	idal Waters					
OF17	tidal Waters	Mans show Flood Zone or Flood Disk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)		
OF17	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges. Mans show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some case	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]		
OF17	tidal Waters	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0 s 0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood		
OF17	tidal Waters	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas \(\tilde{\text{pr}} \) ro such mapping has been done locally) and there appears to be infrastructure		box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood		
OF17	tidal Waters	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges.	s 0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood		
OF17	tidal Waters	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may parity limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas ip r no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there ino infrastructure vulnerable	s 0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood		
	Relative Elevation in Watershed	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. The determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's	0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv]		
OF18	Relative Elevation in Watershed Water Quality Sensitive	surges Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas (pr no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (pr no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv]		
OF18	Relative Elevation in Watershed Water Quality Sensitive Watershed or Area Degraded Water	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AR's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AR's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Entert 1 – yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv] If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should		
OF18	Relative Elevation in Watershed Water Ouality Sensitive Watershed or Area	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AR's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AR's elevation by the (max-min). In Google Earth, open KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Einter 1 – yes, 0 – no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and:	0 0 1 1 0.3E	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv] If an ACCDC report is available for this AA, it also may contain such information. [NRv]		
OF18	Relative Elevation in Watershed Water Quality Sensitive Watershed or Area Degraded Water	surges Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (tother injoht, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Einter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA.	0 0 1 1 0.38	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv] If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,		
OF18	Relative Elevation in Watershed Water Quality Sensitive Watershed or Area Degraded Water	surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding the tender vulnerable to remain and there appears to be infrastructure vulnerable to river flooding the tender vulnerable to river flooding the early and there appears to be infrastructure vulnerable to river flooding the early and there appears to be infrastructure vulnerable to river flooding the tender vulnerable to river flooding the tender vulnerable to river flooding the vulnerable to river flooding the read vulnerable to river flooding the tenderable to river flooding the vulnerable to river flooding	0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv] [FA, NR, Sens, SFSv, WCv, WSv] If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,		
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		•		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(a) land cover is mostly non-riorest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		THE SHARING IS		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OFOE				TAMAND OF A WOUND
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE), north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	- 1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OE26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:	Ů	Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
01 20	(Path Length)	The nonzoniar now distance from the welland 3 filler to dutler is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(r dar congui)	<10 m.	0	and miles are datices, and dagment by mad inspection. [111, 62, 111, 61, 115]
		10 - 50 m.	0	1
		50 - 100 m.	0	1
		100 - 1000 m.	- 1	
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
0527	Crowing Documents		U	This layer was provided by Dr. Don McKonney of the Constitution of Constitution (AM) CO. FO. Was
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	l	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html	Ī	aters.html [AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	[MW, FA, FK, WV, WOF, WON]
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	0	
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
0500	0 1 10 11	3 13 13 1		D 116 # 6 400D0 # 11
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv, WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying SuppInfo file, or the AA is within a	0	WDINVJ
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	- 1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	black back recalling Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		This was provided by Dr. David Ecske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				(ana)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.	I	
			<u></u>	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	I	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are	1	
		agencies for more recent information.	<u> </u>	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tollank (not	Ī	
		0).	Ī	
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	Ī	
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l -	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.	Ī	
OE27	Calcaroous Posics	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	Λ.	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.	Ī	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		mater is not actain (μπ is asually ≥0).see i iguie Aro ili Appendix A of the Mahadi. Il no hidp coverage, change (widhk.	Ī	
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere	l -	
		conditions.	Ī	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	1
		, , , , , , , , , , , , , , , , , , ,	l	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

D	ate: 19 Sept 2019	Site Identifier: PLE-W-03	Investigator:	Matt Alexand	le
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 μS/cm (<64 ppm TDS). Trees are absent or nearty so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of a e the open water part ad, cent " is used synonymo, bed features along their a	he AA should include all persistent waters in ponds smaller than 8 hectares (~283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should facent to welland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (mammade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	#. 95%, 5 # 75-95%, 4 # 50-75%, 3 # 25-05%, 2 # 5-25%, 1 # <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-wood) vegetation, these percentages should not sum to 100%.	-	huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 1	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees. deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	1	
Note :	If none of top 4 rows in	deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation. F3 was marked 2 or greater, SKIP to F9 (N fixers).	1	
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter Classes	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise > 5% of the woody canopy cover in the AA or > 5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		conferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
6	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	1	[AM, INV, NR, PH, SBM, Sens]
	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:		Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	at least 2 m tall. [POL, SBM, WBN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
	Downed Weed	Several (>8/hectare) but above not true. The number of downed used pieces leaves than 2 m and with diameter >10 cm, and not possistently submorated in:	1	Evaluda tamparany "hum pilos " IAM IMI/ DOL SPAII
8	Downed Wood	Several (>8/hectare) but above not true. The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is: Few or none that meet these criteria.	0	Exclude temporary "burn piles." [AM, INV, POL, SBM]

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is: c1% or none. 1-25% of the vegetated cover, in the AA or along its water edge (whichever has more). 1-255-0% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1-25% of the vegetated cover, in the AA or along its water edge (whichever has more). 25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 5 Sphagnum Moss The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller	
25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 75% of the vegetated cover, in the AA or along its water edge (whichever has more). The cover of Sphagnum Moss The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller	
50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 75% of the vegetated cover, in the AA or along its water edge (whichever has more). 70 The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller	
>75% of the vegetated cover, in the AA or along its water edge (whichever has more). The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller	
many and the control of the Control	Exclude moss growing on trees and rocks. [CS, PH]
Extent sedges and other plants rooted in it, is:	
c5% of the vegetated part of the AA. 0	
5-25% of the vegetated part of the AA. 0 25-50% of the vegetated part of the AA. 0	
50-95% of the vegetated part of the AA.	
.95% of the vegetated part of the AA.	
F11	Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foilage.	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	
Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	
Other conditions.	
Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	
F12 Ground Irregularity Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guillies, natural leves, microdepressions, and other areas of peat or mineral soil that are raised or descreed. All presents of the properties of the p	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
depressed >10 cm compared to most of the area within a few meters surrounding them is:	
Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered). O Intermediate.	
Several (extensive micro-topography).	
F13 Upland Inclusions Within the AA, inclusions of upland are:	[AM, NR, SBM]
Few or none. 0	
Intermediate (1 - 10% of vegetated part of the AA).	
Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	
	[CS, NR, OE, PH, PR, Sens, SFS, WS]
least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]	
Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	
Fines: includes silt, clay, silf, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	
forefinger.	
Deep Peat, to 40 cm depth or greater. 0 Shallow Peat or organic <40 cm deep. 0	
Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended 0	
between thumb and forefinger.	
F15 Shorebird Feeding During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]	This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
Habitats unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.] None, or <100 sq. m.	
100-1000 sg m. 0	
1000 – 10,000 sq. m. 0	
>10,000 sq. m. 0	
F16 Herbaceous % of Vegetated Wetland Vegetated Wetland	[AM, WBF, WBN]
3% of the vegetated part of the AA of <0.01 nectate (whichever is less), wank if there and Skip to F20 (invasive Plant Cover).	
5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA. 0	
50-95% of the vegetated part of the AA.	
. 95% of the vegetated part of the AA. 0	
	Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
<5% of the herbaceous part of the AA.	or others that lack showy flowers. [POL]
5-25% of the herbaceous part of the AA. 0	
25-50% of the herbaceous part of the AA.	
50-95% of the herbaceous part of the AA.	
>95% of the herbaceous part of the AA. O F18 Sedge Cover Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	
Sough Cover spy, and countries (Engineering Spp.) occupy. <5% of the vegetated area, or none.	s
<5% of the vegetated area, or none. 5.50% of the vegetated area. 1	
50-95% of the vegetated area. 0	
>95% of the vegetated area.	
	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
Abundant Herbaceous aquatic plants). Then choose one of the following: Species those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	
Species those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. 1 those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year. 0	
	[EC, PH, POL, Sens]
file.	
invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	
invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	
invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	
invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). 0	
invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	W. J. J. J. 10 10 10 11 17 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18
Upland Edge species is:	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
none of the upland edge (invasives apparently absent), or AA has no upland edge.	species cannot be identified, answer "none". [PH, STR]
some (but <5%) of the upland edge.	
5-50% of the upland edge.	
most (>50%) of the upland edge. O F22 Fringe Wetland During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the O	[WBF, WBN, WCv]
vegetated zone within the welland. Enter "1" if true, "0" if false.	
vegetated zone within the wetland. Enter "1" if true, "0" if false.	[FR, PR, PU, WBF, WBN]

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F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of		0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		
r 34		<1 m.	0	SBM, Sens, SR, WBN]
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the second of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 2.75% of the water edge. 2.75% of the water edge. 3.75% of the water	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c I m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 55-75% of the water edge. 57-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Floating Algae & Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCV, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Agnere to these criteria strictly - oo hot use personal judgment assed on ren conditions, pH, or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, If known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		The gradient along most of the now pain within the AATS. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52	nt. In many situations, the Vegetated Buffer as %	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		, , , ,,,,, son, son, son, son, the
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		>7070, or all the area within 30 in or the AA edge is other wellands. 3NP to P35.	1	

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type or cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
D # 01		0	(ND DD C CD)
Buller Slope	percent slope of:		[NRv, PRv, Sens, SRv]
	•	0	
	2-5%.	0	1
	5-30%.	0	
	>30%.	0	
Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, fatus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	0	
			4
			1
		0	1
	Unknown if new or expanded within 20 years or not.	1	
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	
	Burned 6-10 years ago.	0	1
	Burned 11-30 years ago.	0	1
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		0	
		0	
Non-consumptive		U	[PU, STR]
			[0, 0.11 ₄
Potential	water and dense shrub thickets.		
	Configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or requiar quided interpretive tours.		
Unvisited Core Area	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the		[AM, FAV, FRV, PH, PU, SBM, STR, WBF, WBN]
	trail.)		
	<5% and no inhabited building is within 100 m of the AA.	0	
	<5% and inhabited building is within 100 m of the AA.	0	
	-		-
	-		
		1	
Frequently Visited		-	[AM, PH, PU, SBM, STR, WBF, WBN]
Area	above.]		
	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
	5-50%.	0	
BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on	0	[PH, PU]
BMP - Wildlife	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets,	0	[AM, PU, WBF, WBN]
Stocklott	of wildliffe (except during hunting seasons). Enter "1" if true.		
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0	1
	Fishing.	0]
	Trapping of furbearers.	0	
	None of the above.	1	(up.1
Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
	Within 0-100 m. of the AA.	0	
	100-500 m. away.	0	
		1	Taylog)
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Unvisited Core Area Frequently Visited Area BMP - Soils BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	Barle Sizepe The beloped and place provision surface for an image of vegitibility of the provision of the provision surface of the spirity and the place of the spirity and the bar and the place of the spirity of the spirity and place of the spirity of the spirity and place of the spirity of	Importors surface, e.g., paved road, parking let, building, expected rock. Both or investily have provious surface or managed registation, e.g., lawn, nor crops, suppared road, disc, landside. Buildie Slope Provide and dischard part of the year and and social social for the selected and accopies >10% of that spland area has a selected part of the selected and accopies >10% of that spland area has a selected part of the part of the selected and accopies >10% of that spland area has a selected part of the part of th

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	Site Identifier: PLE-W-03	1	Date: 19 September 2019	
essor (S) Data Form for Non-Ti	dal Wetlands. WESP-AC for New B	runswick. Version 2.		Dat
Aberrant Timing of Water Inputs				Dat
	likely to have caused the timing of water inputs (but not necessarily their	r valuma) to chift by hours, days, or works, becoming either more	muted (emaller or loss frequent peaks spread over langer times	
	inkely to have caused the timing of water inputs (but not necessarily their ishy (larger or more frequent spikes but over shorter times). [FA, FR, IN]		muteu (smailer or less frequent peaks spreau over longer times	
Stormwater from impervious surfaces that drains directly to the	e wetland.			1
Water subsidies from wastewater effluent, septic system leak	age, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or other	ner consumptive use.			
Flow regulation in tributaries or water level regulation in adjoin	ning water body, or other control structure at water entry points that regu	lates inflow to the wetland.		
	t from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, de	ad-end ditch.			
Artificial drains or ditches in or near the wetland.				
Accelerated downcutting or channelization of an adjacent or i	nternal channel (incised below the historical water table level).			
Logging within the wetland.	sult of machinery livestack fire drainage or off read vahioles			
Subsidence or compaction of the wetland's substrate as a res				
Straightening, ditching, dredging, and/or lining of tributary cha	illiers. e below, assign points. However, if you believe the checked items had n	on massurable affect on the timing of water conditions in any nart of	of the AA then leave the "O's" for the scores in the following row	
	dition if the checked items never occurred or were no longer present.	o measurable enection the liming of water conditions in any partic	in the PAA, then reave the 0.3 for the scores in the following for	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began with	in past 10 years, and only for the part of the wetland that experiences th	ose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
		F	Sum=	
			Stressor subscore=	0
Accelerated Inputs of Contaminants and	I/or Salts			
·	I/or Salts Tring in either the wetland or its CA that is likely to have accelerated the	ne inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S.	TR]	
In the last column, place a check mark next to any item occu	rring in either the wetland or its CA that is likely to have accelerated th	he inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S.	TR]	
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic sys	rring in eilther the wetland or its CA that is likely to have accelerated the tems), landfills, industrial facilities.			
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic sys	rring in either the wetland or its CA that is likely to have accelerated th			
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic system) Metals & chemical wastes from mining, shooting ranges, snow	rring in eilther the wetland or its CA that is likely to have accelerated the tems), landfills, industrial facilities.			
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic sys. Metals & chemical wastes from mining, shooting ranges, snon npri/default.asp?lang=En&n=B85A1846-1	rring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local			
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic systemate). Metals & chemical wastes from mining, shooting ranges, snoopridefault.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi if any items were checked above, then for each row of the table.	rring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA. e below, assign points. However, if you believe the checked items did not the checked items did not the checked items did not the checked items.	ions from National Pollutant Release Inventory and view KMZ ove	rlay in Google Earth. https://www.ec.gc.ca/inrp-	
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In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic system). Metals & chemical wastes from mining, shooting ranges, snonpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi If any items were checked above, then for each row of the table following rows. To estimate effects, contrast the current conditions.	rring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA. e below, assign points. However, if you believe the checked items did no on with the condition if the checked items never occurred or were no long Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over the standard of the standard	arlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the	
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic systemate) Metals & chemical wastes from mining, shooting ranges, snonpriddefault.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi If any items were checked above, then for each row of the table	rring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA. e below, assign points. However, if you believe the checked items did no on with the condition if the checked items never occurred or were no long.	ions from National Pollutant Release Inventory and view KMZ ove of cumulatively expose the AA to significantly higher levels of conta ger present.	rlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the	
In the last column, place a check mark next to any item occu. Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snonpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsi. If any items were checked above, then for each row of the tabli following rows. To estimate effects, contrast the current conditions.	rring in either the wetland or its CA that is likely to have accelerated the stems), landfills, industrial facilities. v storage areas, oil/ gas extraction, other sources (download many local des, or other areas in the CA. e below, assign points. However, if you believe the checked items did no on with the condition if the checked items never occurred or were no long Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over the standard of the standard	arlay in Google Earth. https://www.ec.gc.ca/inrp- aminants and/or salts, then leave the "O's" for the scores in the	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				1
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
soil or sediment.			Cam	
	essment Area		Stressor subscore=	0.42
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	ultered the wetland's soil. Consider only items occurring within pa	Stressor subscore=	0.42
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou	the wetland that is likely to have compacted, eroded, or otherwise a	allered the welland's soil. Consider only items occurring within pa	Stressor subscore=	0.42
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the che	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of th	ported from another wetland. Not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	Stressor subscores st 100 years or since welland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of welland and <5% of its upland edge (if any). >1 yr ago.	0.42
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table befiects, contrast the current condition with the condition if the checked specific contrast the current condition with the condition if the checked specific contrast the current condition in wetland: Recentness of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, especially during wetter. In	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.42

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-03

Date: 19 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.163275, 66.199397

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

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Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.97	Moderate	0.87	Lower	5.56	0.95
Stream Flow Support (SFS)	1.88	Lower	4.86	Moderate	1.00	2.84
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	8.38	Higher	0.82	Lower	8.89	0.50
Phosphorus Retention (PR)	5.03	Higher	4.55	Moderate	6.47	4.44
Nitrate Removal & Retention (NR)	2.77	Moderate	3.75	Moderate	5.54	4.44
Carbon Sequestration (CS)	7.78	Higher			7.92	
Organic Nutrient Export (OE)	3.62	Moderate			4.25	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.95	Moderate	0.88	Moderate	5.62	1.72
Amphibian & Turtle Habitat (AM)	2.67	Lower	2.38	Moderate	4.71	3.54
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.77	Moderate	5.00	Moderate	5.61	5.00
Pollinator Habitat (POL)	8.22	Higher	0.00	Lower	6.62	0.00
Native Plant Habitat (PH)	3.32	Lower	4.70	Moderate	4.42	4.08
Public Use & Recognition (PU)			4.33	Moderate		3.41
Wetland Sensitivity (Sens)			0.00	Lower		1.94
Wetland Ecological Condition (EC)			4.94	Moderate		7.08
Wetland Stressors (STR) (higher score means more stress)			4.14	Moderate		3.78
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.88	Lower	0.87	Lower	5.56	0.95
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.89	Higher	3.79	Lower	8.05	3.79
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	3.78	Lower	3.39	Moderate	4.17	2.18
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.60	Lower	1.43	Lower	2.83	2.12
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.16	Moderate	4.12	Moderate	6.09	4.01
WETLAND CONDITION (EC)			4.94	Moderate		7.08
WETLAND RISK (average of Sensitivity & Stressors)			2.07	Lower		2.86
	NIOTE A				1 16 1	

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLW-W-01
Investigator Name:	Matt Alexander
Date of Field Assessment:	19 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.171674
Longitude (decimal degrees):	66.20564
ls a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.37
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

IT1	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	1
		Newfoundland-Labrador	0	1
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	- 1	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include on the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	1
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	1
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		<50 m, and not separated from the 375-ha vegetated area by any width olpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	1 s.]	
		< 50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain > 375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is > 10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation"]	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AATs vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations)		in Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	· ·	S:		
8	, ,	is: <5% of the land	0	
8		ls: -5% of the land. 5 to 20% of the land.	0	
В		5 to 20% of the land.	0	
В	ŭ	5 to 20% of the land. 20 to 60% of the land.	0	
8		5 to 20% of the land.	0	
		5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 60 to 90% of the land. 500% of the land. SKIP to OF10.	0	IAM. SBMI
	Type of Land Cover Alteration	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 60 to 90% of the land. 500% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0	[AM, SBM]
	Type of Land Cover	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 1	[AM, SBM]
9	Type of Land Cover Alteration	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly. Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0	
9	Type of Land Cover Alteration Distance by Road to	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Type of Land Cover Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly. Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 90% of the land. 90% of the land SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route
9	Type of Land Cover Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the neares/population center is: <100 m.	0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to Nearest Population	5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 50 to 90% of the land. 500 to 90% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dift or gravel road, cropland, landsilde, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	"Population center" means a settlied area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	- 1	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m. >500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an
01.12	Trialio / tooss	separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13		The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		in Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14		The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m. 100 m - 1 km.	0	
		1 -2 km.	0	
		2-5 km.	1	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km.	0	
OF16	Upland Edge Contact	Select one:	0	[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	,,
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non-			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases evees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	modeling. [WSv]
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges.	0	
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	-	[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.16	
DF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		Walters. Data are insufficient (no or inadequate campling within 1 km, or condition exists only at > 1 km unchroam/This is the cituation for nearly.	1	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.		
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	1	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised	0	
OF23	Unvegetated Surface in	In the proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots.		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	*
		10 to 25%.	0	
		>25%.	0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively, (d) land cover is mostly non-forest,		
		(a) land cover is mostly non-iorest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		This section is.		
		Mostly true.	0	
		Somewhat true.	0	
			1	
0.505		Mostly untrue.	_	TAMAND OF A WOUND
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	0	
OE26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:	ů	Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
01 20	(Path Length)	The nonzoniar now distance from the welland 3 filler to oditer is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(i dai congai)	<10 m.	0	and miles are datices, and dagment by mad inspection. [111, 62, 111, 61, 115]
		10 - 50 m.	0	1
		50 - 100 m.	1	
		100 - 1000 m.	0	
		1- 2 km.	0	1
		>2 km, or wetland lacks an inlet and outlet.	0	1
0527	Crowing Dogram Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL_GrowingDegreeDays. Place your cursor over the AA	Ů	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PET_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2314	Inis layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
0555		1.1.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	1	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	,, ,,,
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	Ů	
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation			Request information from ACCDC and/or conduct your own survey at an appropriate season using a
UF29	Concern	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	Concern			WBNv)
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WDW)
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	black back Nesting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	·	This was provided by Dr. David Ecske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				(ana)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
			L	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are		
		agencies for more recent information.		
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change the lank (not		
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
	330	the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	1	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
OE27	Calcaroous Posion	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	_	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		mater to the control (p. 1. to account years of a paper train of the Mahadi. It has map coverage, change wind it.		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere		
		conditions.	L	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
				1
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

D	ite: 19 Sept 2019	Site Identifier: PLW-W-01	Investigator:	: Matt Alexand	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to all to	Constitute of the	D. I	Deficition In 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	3		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh ncludi a dja lescri	minder: For all questions, the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The should also include part of the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should ude the open water part adjacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, glacent "is used synonymously with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the cribed features along their directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their test match. The features do not have to be hydrologically connected in order to be considered adjacent.			
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, NV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	• • • • • • • • • • • • • • • • • • • •
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter Classes	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
		(perimeter). The edge should include only the trees whose canopies extend into the AA.		ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
6	Haight Class	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	1	IAM INV NP PH SPM Sons!
6	Height Class Interspersion	coniferous, >40 cm diameter.	1	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	1 1	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	1 1 0	[AM, INV, NR, PH, SBM, Sens]
6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.		[AM, INV, NR, PH, SBM, Sens]
6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 37.07%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely		[AM, INV, NR, PH, SBM, Sens]
6	Interspersion Large Snags (Dead	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	
7	Interspersion Large Snags (Dead	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise >0.70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B4 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion Large Snags (Dead	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion Large Snags (Dead Standing Trees)	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30.70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than B/ hectare which exceed this diameter. Several (>8/hectare) but above not true.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an at least 2 m tall. [POL, SBM, WBN]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
,	IN FIXEIS	is:		bo not include whaling agas of inclicits. [FA, FR, INV, INV, OE, FR, Solin, Scrip]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	
F13	Upland Inclusions	Several (extensive micro-topography). Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	- plana malasions	Few or none.	0	• • •
		Intermediate (1 - 10% of vegetated part of the AA).	1	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarrest includes cond, learning and ground, each locality that do not make a ribbon when maintained ralled, cause and extended.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	U	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m. 100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
		<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	1	
		25-50% of the vegetaled part of the AA. 50-95% of the vegetaled part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
1 10	Sauge Cover			[oo]
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following:	-1	
	эрешез	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invacina Blant Cours	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
1 20	Invasive Plant Cover	file.		رحي . ۱۰٫۰ حد محانها
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	1	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge	none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species, assume the unidentified plant to also be exolic. If vegetation is so seriesced that exolic species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter "1" if true, "0" if false.	0	[WBF, WBN, WCv]
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
123	Educustrile Welldill	a normal year.	ľ	graying symptymony

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F24	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA. 20-50% of the AA.	0	
		50-95% of the AA.	0	
F0/		>95% of the AA. True for many fringe wetlands.	0	Es MO
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	1	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F07	00.000	>75% of the water is shaded.	0	
F27	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29. 1-20% of the AA, or <1% but >0.01 ha.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	
F28	Annual Water	>95% of the AA. The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	1	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		10 cm - 50 cm change.	1	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	
		1-2 m change. >2 m change.	0	
Is the /		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	1	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	·	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: <5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	WBF, WBN, WC, WS]
		5-30% of the water, or it occupies < 100 sq. in cumulatively. Nearly all the surface water is nowing. Share to 1.34.	0	
		30-70% of the water.	0	
		70.95% of the water.	0	
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	шагіз ороп	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		5-30% of the ponded water. 30-70% of the ponded water.	0	
		70-99% of the ponded water.	0	
E24	Width of Vocat-t- d	100% of the ponded water. At the time during the groups season when the AA's water level is leavest the average width of ungested area in the AA that seasons to	0	"Variateled area" does not include underwater or fleeting legical state in a second state in the Marian
F34	Width of Vegetated Zone within Wetland	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is:		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
		<1 m.	0	SBM, Sens, SR, WBN]
		1 - 9 m.	0	
		10 - 29 m. 30 - 49 m.	0	
		50 - 100 m.	0	
F35	Flat Shoreline Extent	> 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines
. 33	riat Shoreline Exterit	builing most of the part of the growing season when water is present, the percentage of the AA's water edge length that is hearty hat (a slope less than about 5% measured within 5 m landward of the water) is:		that has such a gentle slope. [SR, WBN]
		<1% of the water edge.	0	
		1-25% of the water edge. 25-50% of the water edge.	0	
		50-75% of the water edge.	0	
F2.4	61.15	>75% of the water edge.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmilles</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0	
		1-25% of the emergent vegetation. 25-75% of the emergent vegetation.	0	
		>75%, of the emergent vegetation.	0	
		- ·		

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:	0	wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[
F40	Incluted Island	Extensive. The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on	0	[WBN]
F4U	Isolated Island	all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	Ü	
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilch, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement). No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland,	1	
E42	Outflow Confin	ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	1	*Moior moff overlet would include his self-lish materials in the self-lish
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography)	0	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		that does not appear to drain the wetland artificially during most of the growing season.		
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[wcv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairty straight channels. Bumps into tree trunks and/or shrub stems and follows a fairty indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".		roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter *1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in \(\mu \)S\(\mu \)m in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1.00	of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Anoner to tinese criteria stricity - oo not use personal judgment assed on ren conditions, pH, or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	, , , , , , , , , , , , , , , ,
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
101	internal Gradient	The gradient along most of the now pain within the AA is: <2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than ~1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	Ü	and the second s
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		• · · · · · · · · · · · · · · · · · · ·
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. 290%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		2 70 70; or an area within 50 in or the AM cage is office Welldius. SNIF to F33.	1	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or cover at Banci	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	0	-
		3-30%. >30%.	0	-
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Ciliis of Steep Banks	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		portion mende dynamica arees as potential activistics. It OE, Solmj
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	1	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	-
		Burned 6-10 years ago.	0	-
		Burned 11-30 years ago.	0	
F0.	V (1-11-11)	Burned >30 years ago, or no evidence of a burn and no data.	1	[DL CTD WDF.]
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	0	
		25-50%.	0	
F0	NI	>50%.	1	[DLI CTD]
59	Non-consumptive Uses - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	1	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Nate: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the welland is visible from the trails and they are within 30 m of the weltand edge. In that case include only the area occupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	1	
		5-50% and inhabited building is within 100 m of the AA.	0	-
		50-95%, with or without inhabited building nearby.	0	
61	Eroguanthy Violtad	>95% of the AA with or without inhabited building nearby.	0	TAM DIL DIL COM CTD MIDE MIDNI
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	0	
		5-50%.	1	
		50-95%.	0	-
62	BMP - Soils	>95% of the AA. Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	
		Low-impact commercial umber narvest (e.g., selective minning). Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	1
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	
		>500 m. away, or no information.	1	
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplinfo file for list of plant indicators	0	[PH, PR]

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gator: Matt Alexander	Site Identifier: PLW-W-01	Da	ate: 19 September 2019
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2	
Aberrant Timing of Water Inputs	Wollands: West As for New B	Turiowick. Voloion 2.	
,	to be a second the state of control in the first and the state of the		
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			iuteu (smaller of less frequent peaks spreau over longer times
Stormwater from impervious surfaces that drains directly to the wetl	and.		
Water subsidies from wastewater effluent, septic system leakage, si	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.		
Flow regulation in tributaries or water level regulation in adjoining water	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	it of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or interna	channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of i	*		
Straightening, ditching, dredging, and/or lining of tributary channels.			
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		io measurable effect on the timing of water conditions in any part of	the AA, then leave the "US" for the scores in the following row
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within pas	t 10 years, and only for the part of the wetland that experiences th	nose.	-
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
Accelerated Inputs of Contaminants and/or and In the last column, place a check mark next to any item - occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining. shooting ranges, snow storated in the store of the s	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		
In the last column, place a check mark next to any item occurring in	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		R]
In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including falling septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		R]
In the last column, place a check mark next to any Item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang-En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	in either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA.	tions from National Pollutant Release Inventory and view KMZ over	R/ lay in Google Earth. https://www.ec.gc.ca/inrp-
In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belo	in either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did no	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of contain	R/ lay in Google Earth. https://www.ec.gc.ca/inrp-
In the last column, place a check mark next to any Item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang-En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	in either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no lor	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of containing present.	R] lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salls, then leave the "O's" for the scores in the
In the last column, place a check mark next to any Item occurring it Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or If any Items were checked above, then for each row of the table belo following rows. To estimate effects, contrast the current condition with	in either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no long Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of contain	lay in Google Earth. https://www.ec.gc.ca/inrp- lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salls, then leave the "O's" for the scores in the Mild (1 point)
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In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belof following rows. To estimate effects, contrast the current condition with Usual toxicity of most toxic contaminants: Frequency & duration of input:	in either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no lor Severe (3 points) Industrial effluent, mining waste, unmanaged landfill. Frequent and year-round.	ot cumulatively expose the AA to significantly higher levels of containing present. Medium (2 points) Cropland, managed landfill, pipeline or transmission rights-of-way. Frequent but mostly seasonal.	lay in Google Earth. https://www.ec.gc.ca/inrp- lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "Os" for the scores in the Mild (1 point) Low density residential. Infrequent & during high runoff events mainly.
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or win	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				1
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				1
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	1
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	3
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	3
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment.	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
			Stressor subscore=	0.83
In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	n the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa	at 100 years or sings walland was greated or restored (whichever	
Compaction from machinery off-road vehicles livestock or mor	intain hikes, especially during wetter periods		st 100 years of since welland was created of restored (whichever	1
Compaction from machinery, off-road vehicles, livestock, or mou	untain bikes, especially during wetter periods.		i Too years or since welland was created or residied (whichever	1
Leveling or other grading not to the natural contour.			i Tuu years or since weiland was created or restored (winchever	1
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ	e plants).		i Tuu years or since weiland was created or restored (winchever	1
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing			i Tuu years or since weiland was created or restored (winchever	1
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation.	e plants).		i Tuu years or since weiland was created or restored (winchever	1
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the welland.	e plants). organic amendments (compost, etc.) or small amounts of topsoil im		i Tuu years or since weiland was created or restored (winchever	1
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause	e plants). Jorganic amendments (compost, etc.) or small amounts of topsoil important amounts of topsoi		i Tuu years or since weiland was created or restored (winchever	1
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Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the checked above the condition of the checked above the condition of the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the current condition with the condition in the checked above the current condition with the current conditio	e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. below, assign points. However, if you believe the checked items did in cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing.	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	1 3
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table I effects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. below, assign points. However, if you believe the checked items did in cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	we the "Os" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	1 3 3
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the checked above the condition of the checked above the condition of the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the condition if the checked above the current condition with the current condition with the condition in the checked above the current condition with the current conditio	e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. below, assign points. However, if you believe the checked items did in cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing.	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	we the "Os" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense. Mainly during one-time or scattered events.	1 3 3 3 3
Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table I effects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	e plants). organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. sion or stir bottom sediments. below, assign points. However, if you believe the checked items did in cked items never occurred or were no longer present. Severe (3 points) >95% of wetland or >95% of its upland edge (if any). Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	we the "Os" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	1 3 3

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLW-W-01

Date: 19 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.171674, 66.20564

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	8.33	Higher	0.32	Lower	8.13	0.40
Stream Flow Support (SFS)	0.00	Lower	0.00	Lower	0.00	0.00
Water Cooling (WC)	2.00	Moderate	0.00	Lower	1.33	0.00
Sediment Retention & Stabilisation (SR)	10.00	Higher	1.74	Lower	10.00	1.06
Phosphorus Retention (PR)	10.00	Higher	4.55	Moderate	10.00	4.44
Nitrate Removal & Retention (NR)	10.00	Higher	3.75	Moderate	10.00	4.44
Carbon Sequestration (CS)	3.15	Moderate			5.92	
Organic Nutrient Export (OE)	1.20	Lower			2.97	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	0.69	Lower	4.00	Moderate	4.12	3.40
Amphibian & Turtle Habitat (AM)	5.24	Moderate	5.62	Moderate	6.07	5.50
Waterbird Feeding Habitat (WBF)	5.05	Moderate	5.00	Moderate	4.02	5.00
Waterbird Nesting Habitat (WBN)	3.32	Moderate	5.00	Moderate	2.84	5.00
Songbird, Raptor, & Mammal Habitat (SBM)	9.03	Higher	5.00	Moderate	7.49	5.00
Pollinator Habitat (POL)	9.37	Higher	0.00	Lower	7.55	0.00
Native Plant Habitat (PH)	4.41	Moderate	5.77	Moderate	4.86	5.01
Public Use & Recognition (PU)			3.07	Moderate		2.51
Wetland Sensitivity (Sens)			2.20	Lower		2.86
Wetland Ecological Condition (EC)			2.53	Lower		5.69
Wetland Stressors (STR) (higher score means more stress)			8.23	Higher		5.28
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	0.00	Lower	0.32	Lower	8.13	0.40
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	10.00	Higher	3.95	Lower	9.49	3.88
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	1.49	Lower	2.67	Moderate	3.11	2.27
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	3.98	Moderate	4.37	Moderate	4.33	4.30
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.49	Higher	4.68	Moderate	7.09	4.17
WETLAND CONDITION (EC)			2.53	Lower		5.69
WETLAND RISK (average of Sensitivity & Stressors)			5.21	Higher		4.07
	NOTE: A coor	e of 0 does not	moon the fune	tion or honofit i	a abaant from t	ho wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLW-W-02
Investigator Name:	Matt Alexander
Date of Field Assessment:	19 September 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.165598
Longitude (decimal degrees):	66.202174
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.51
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	15
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including rox >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measi tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	,
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	- 1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) targer than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sen:
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaped.]	1 95.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of herbaceous vegetation"]	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estimating the boundaries of the bu of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMV, I POLV, SBMV, WBFV, WBNV]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	0	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The AAT's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations)		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage	is:		
8	Percentage	is:		
В	Percentage	S:	0	
3	Percentage	ls: <5% of the land. 5 to 20% of the land.	0	
В	Percentage	s: -5% of the land50 to 60% of the land	0 0	
В	Percentage	ls: <5% of the land. 5 to 20% of the land.	0	
		IS: -5% of the land. 5 to 20% of the land. 2 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land90% of the land. SKIP to OF10.	0 0	IAM SBMI
	Percentage Type of Land Cover Alteration	Is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land. 50% of the land. 50% of the land. Within the S-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0	[AM, SBM]
	Type of Land Cover	s: -5% of the land. 50 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	[AM, SBM]
9	Type of Land Cover Alteration	s: -5% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land20 to 60% of the land60 to 90% of the land80% of the land80% of the land. SKIP to OF10	0 0 0 0	
9	Type of Land Cover Alteration Distance by Road to	s: -5% of the land. 50 20% of the land. 20 to 60% of the land. 20 to 60% of the land. 50 to 90% of the land. 50 to 90% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Type of Land Cover Alteration Distance by Road to Nearest Population	s: -5% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land60 to 90% of the land60 to 90% of the land80% of the land. SKIP to OF10	0 0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to	s: -5% of the land5 to 20% of the land5 to 20% of the land20 to 60% of the land20 to 60% of the land20 to 60% of the land80% of the land.	0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route.
9	Type of Land Cover Alteration Distance by Road to Nearest Population	Sc	0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
9	Type of Land Cover Alteration Distance by Road to Nearest Population	sc 5% of the land. 55% of the land. 50 to 60% of the land. 20 to 60% of the land. 20 to 60% of the land. 60 to 90% of the land. 80% of the lan	0 0 0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O
N	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	- 1	
		50 - 100 m.	0	
		100 - 500 m.	0	
OF12 W	Vildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an
		separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
V	Vater	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	1	
		50-500 m, but separated by those features. 0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
Р	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	
		2-5 km.	1	
		5-10 km.	0	
		>10 km.	0	
DF15 T	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km.	0	
		10-40 km. >40 km.	0	
)F16 I	Jpland Edge Contact	Select one:	U	[NR, SBM, Sens]
110	spiana Eage Contact	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	inty Som, Sorts
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
OF17 F	lood Domogo from Non	will be true for most assessments done with WESP-AC.		In the Cookin manufactor, elick on "More" is upper right, then "Fleed Information". Expand the manufactor
	Flood Damage from Non idal Waters			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
		Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
	Relative Elevation in Vatershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.18	[FA, NR, Sens, SFSv, WCv, WSv]
	Vater Quality Sensitive Vatershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0 - no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
	Degraded Water	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
U	Jpstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA.	0	and and the state of the state
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmalt) indicates no problems in either the AA or inflaving	n	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
)E21 D	Nograded Water	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0	May use existing data or monitor waters as part of this welland accessment. INDv. DDv. SDv.
	Degraded Water Downstream	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and:	1	May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Degraded Water Downstream	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel.	0	May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
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DF22 W	Oownstream Wetland as a % of its Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0 0	Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
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DF22 VCCCCC	Vetland as a % of its Contributing Area Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downstope from the AA, and: The condition is present within 1 km downstope and connected to the AA by a channel. The condition is present within 5 km downstope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. -1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise boog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]

stocked. In NB, the list of stocked waters is at:	OF24		_		
Secretarian processing and process		Transport From Upslope			[NRv, PRv, SRv, WSv]
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The state of the S. S. William for the sequents depth greacy and colored (i) the state of the st	OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
The state of the S. S. William for the sequents depth greacy and colored (i) the state of the st			Northward (N. NE), north-facing contributing area.	0	
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Proceedings Process				- 1	
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Service of the Service Control of the Service	UF26		The horizontal flow distance from the wetland's inlet to outlet is:		
10-100 m. 100 Your		(Pain Lengin)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
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h forces to support carried the support support for the first supp	OF28	Fish Access or Use			Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
Agency And the Mortal. Control Load Salvey biologists, involved the ALCCC report and with these webdiles. All phones similaries controlless controlle				0	http://www2.qnb.ca/content/qnb/en/departments/erd/natural_resources/content/fish/content/Stocked
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samon or other anadomous, species or eits and is probably accessed by those darkings of species but is breast in deep lot beather field in blanch that is lead sessonally. 5. In common of livery to be follows of all probably accessed by the origination of the plant of species of the sense or whether the plant of the plant of species or the sense of the plant of species of the sense of the plant of species or the sense of the plant of species of the sense of the sense of the plant of species or more of the plant species listed in the Plant, Reve workshed of the accompanying Specifie file. Presence of one or more of the plant species listed in the Plant, Reve workshed of the accompanying Specifie file. Presence of one or more of the plant species listed in the Plant, Reve workshed of the accompanying Specifie file. Presence of one or more of the plant species listed of the file species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concern as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of conservation concerns as listed in the Widdle, Reve workshed of the accompanying Specifie file. Presence of one or more of the material species (MM) of c				<u> </u>	
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Once of the control o			Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
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Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	OF33 OF34 OF35 OF36	Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	If AAI is on private land with no information, change to blank, (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area—but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) or its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AAI is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AAI is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AAI is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AAI is na area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 3), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tublank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent information if available.	0 0 0	[PU] [PU] [PU] [PU] [FU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp. [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
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Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	OF33 OF34 OF35 OF36	Concentration Areas Other Conservation Designation Conservation Investment Mitigation Investment Sustained Scientific Use Calcareous Region	If AAI is on private land with no information, change to blank, (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNiB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are agencies for more recent information. The AAI is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AAI is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change toblank. The AA is in an area that is at least partly undertain by soil, sediment, or bedrock that is highly calcareous (enter 3) in rest column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none=0. Limestone is typically a major component (Karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank. Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent information if available. New timb	0 0 0	[PU] [PU] [PU] [PU] [FU] If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH] "Private lands" may include those owned or leased by non-governmental organizations, e.g.,
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D	ate: 19 Sept 2019	Site Identifier: PLW-W-02	Investigator:	: Matt Alexand	de
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	1- 11 -		F :	
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or free and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bufush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja lescn	ould also include part of i e the open water part adj cent " is used synonymoo bed features along their i	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should iscent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this dat form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Decladous stricts in this region losality include distinctions, Labriator lea, adjusting (worked), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the threes/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	2	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	3	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	mass species together do not comprise > 3 or 3	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	pun, oo, i oe, oon, oon, iion,
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	
		broad-leaved deciduous >40 cm diameter.	1	
5	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	1	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
			0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0 0	
7	Large Snags (Dead	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Large Snags (Dead Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely—absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0	
7	Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be lotally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 0	

FieldF form - Non-tidal Page 1 of 5

FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDIDE INFINITY BIGGE OF INCIDENS. [F.A., F.K., INVV, INVV, OL., F.H., SDIW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F10	Constant less entretts	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	The description of the second state of the SC IAM AND DISTRICT OF THE SECOND SE
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	0	
		Several (extensive micro-lopography).	1	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
E4.	0.11.	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	focus of pulps of organics
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	Ů	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F4-	0	between thumb and forefinger.		
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
F4.6		>10,000 sq. m.	0	TAM MIDE MIDES
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
		<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	1	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	advault plants). Then choose one or the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file. Invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant	3	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	1	
		5-50% of the upland edge. most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

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F24	% of AA Without	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmell or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	1
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	1
		>95% of the AA. True for many fringe wetlands.	0	1
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	-
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	0	1
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	0	paint species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:	J	Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range		0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
		<10 cm change (stable or nearly so). 10 cm - 50 cm change.	0	PR, SR, WBN, WS]
		0.5 - 1 m change.	0	1
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth
		0.5 - 1 m deep.	0	of the most persistently inundated part of the wetland. Include surface water in channels and ditches as well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	<u> </u>	0	WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	1
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	1
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	
		5-30% of the water.	0	-
		30-70% of the water. 70-95% of the water.	0	-
		>95% of the water.	0	1
F32	Ponded Open Water - Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water that is Open	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	асто Орен	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter *1* and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F2.4	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ť	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
r 34				include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
F34	Zone within Wetland	adjoining uplands from open water within the AA is:		
r 34		<1 m.	0	SBM, Sens, SR, WBN]
F34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m.	0	
r 34		<1 m. 1 - 9 m.	0	
r 34		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0	
F35		<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0	
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
	Zone within Wetland	< m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 50-75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines
F35	Zone within Wetland	<1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	< 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 25-50% of the water edge. 5-75% of the water edge. >75% of the water edge.	0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F35	Zone within Wetland Flat Shoreline Extent	In the second of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 2.75% of the water edge. 2.75% of the water edge. 3.75% of the water	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water
F35	Zone within Wetland Flat Shoreline Extent	c1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 50-75% of the water edge. 50-75% of the water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmites</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0 0 0 0 0 0 0 0 0 0	SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN] Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Floating Algae & Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCV, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):	1	See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Agnere to these criteria strictly - oo hot use personal judgment assed on ren conditions, pH, or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, If known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		The gradient along most of the now pain within the AATS. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52	nt. In many situations, the Vegetated Buffer as %	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		, , , ,,,,, son, son, son, son, the
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		27070, or all the area within 30 in or the AA edge is other wellands. 3NP to P35.	1	

FieldF form - Non-tidal Page 4 of 5

53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	0	-
		3-30%. >30%.	0	-
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis di Steep Banks	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		portion mende dynamica arees as potential activistics. It OE, Solmj
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	
		Yes, but time of origin or expansion unknown.	0	
		Unknown if new or expanded within 20 years or not.	1	
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	-
		Burned 6-10 years ago.	0	-
		Burned 11-30 years ago.	0	
F0.	V (1-11-1114-)	Burned >30 years ago, or no evidence of a burn and no data.	1	[DL CTD WDF.]
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.	0	
		25-50%.	0	
T0	M1	>50%.	1	[DLI CTD]
59	Non-consumptive Uses - Actual or	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Potential	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	1	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	_
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
41	Eroguantly Violtad	>95% of the AA with or without inhabited building nearby.	1	TAM DIL DIL COM CTD WIDE WIDNI
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%. >95% of the AA.	0	
62	BMP - Soils	>>>s of the AA. Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter *1* if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	1
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	1
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	
	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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gator: Matt Alexander	Site Identifier: PLW-W-02	Da	ate: 19 September 2019
essor (S) Data Form for Non-Tidal	Wetlands, WESP-AC for New B	runswick. Version 2.	
Aberrant Timing of Water Inputs			
In the last column, place a check mark next to any item that is likely t	to have caused the timing of water inputs (but not necessarily their	r valuma) to shift hy hours, days, or weeks, hecoming either more o	nutad (smaller or less fraquent needs spread over langer time
more temporal homogeneity of flow or water levels) or more flashy (la			lated (Smaller or less frequent peaks spread over longer time.
Stormwater from impervious surfaces that drains directly to the wetl	and.		
Water subsidies from wastewater effluent, septic system leakage, si	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other con	nsumptive use.		
Flow regulation in tributaries or water level regulation in adjoining water	ater body, or other control structure at water entry points that regu	lates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	1 ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or interna	I channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of t			
Straightening, ditching, dredging, and/or lining of tributary channels.		no managemble offset on the timing of vister conditions in any part of	the AA then leave the "O's" for the seems in the following so
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		to measurable effect on the liming of water conditions in any part of	the AA, then leave the "US" for the scores in the following row
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within pas	t 10 years, and only for the part of the wetland that experiences th	nose.	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
Accelerated Inputs of Contaminants and/or and In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				1
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	0
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	1
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	1
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	3
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
soil or sediment.			oun.	
	essment Area		Stressor subscore=	0.42
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	ultered the wetland's soil. Consider only items occurring within pa	Stressor subscore=	0.42
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table befiects, contrast the current condition with the condition if the checked place in the sufficient to action of the table befiects and the condition of the checked place in the condition of the checked place in the current condition with the condition if the checked place in the current condition in wetland: Recentness of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of th	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.42

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLW-W-02

Date: 19 September 2019

Observer: Matt Alexander

Latitude & Longitude (decimal degrees): 45.165598, 66.202174

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

сотранеа.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.40	Moderate	0.37	Lower	5.11	0.45
Stream Flow Support (SFS)	2.66	Lower	3.32	Moderate	1.42	1.93
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	6.75	Higher	1.19	Lower	7.78	0.72
Phosphorus Retention (PR)	4.46	Higher	4.55	Moderate	6.06	4.44
Nitrate Removal & Retention (NR)	2.62	Moderate	3.75	Moderate	5.45	4.44
Carbon Sequestration (CS)	7.21	Higher			7.67	
Organic Nutrient Export (OE)	3.44	Moderate			4.16	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	6.61	Higher	1.24	Moderate	6.20	1.91
Amphibian & Turtle Habitat (AM)	3.21	Lower	1.49	Lower	5.00	3.00
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	7.82	Higher	2.50	Lower	6.49	2.50
Pollinator Habitat (POL)	9.05	Higher	0.00	Lower	7.29	0.00
Native Plant Habitat (PH)	5.64	Moderate	5.29	Moderate	5.36	4.59
Public Use & Recognition (PU)			4.58	Moderate		3.59
Wetland Sensitivity (Sens)			5.64	Higher		3.89
Wetland Ecological Condition (EC)			4.94	Moderate		7.08
Wetland Stressors (STR) (higher score means more stress)			4.18	Moderate		3.80
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.66	Moderate	0.37	Lower	5.11	0.45
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	5.68	Higher	3.85	Lower	7.26	3.82
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.89	Moderate	2.42	Moderate	4.57	1.61
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.93	Lower	0.89	Lower	3.00	1.80
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.28	Higher	3.94	Moderate	6.83	3.48
WETLAND CONDITION (EC)			4.94	Moderate		7.08
WETLAND RISK (average of Sensitivity & Stressors)			4.91	Higher		3.84
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	he wetland. It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - BB-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	5 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.195989
Longitude (decimal degrees):	-66.201031
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	4.25
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	Sparad data oxists in a particular province.
		Prince Edward Island	0	1
		Newfoundland-Labrador	0	1
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Meass tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	1
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		450 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes.]	1 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of 'herbaceous vegetation']	2	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estilianting the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	3	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The ARS vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
	1	<5% of the land.	0	
		5 to 20% of the land.	0	1
				i
		20 to 60% of the land.	0	
		20 to 60% of the land. 60 to 90% of the land.	0	1
9	Type of Land Cover	60 to 90% of the land.		[AM, SBM]
9	Type of Land Cover Alteration	60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 1	[AM, SBM]
9		60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 1 0	[AM, SBM]
	Alteration	60 to 90% of the land. 50 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 1	
	Alteration Distance by Road to	60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Alteration	60 to 90% of the land. 50 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. 50 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearout, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 1 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m.	0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler i.con, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route
	Alteration Distance by Road to Nearest Population	60 to 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, confler plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m. 100 - 500 m.	0 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the rout Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

M.	istance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. C
	laintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	1
		25 - 50 m.	0	
		50 - 100 m.	1	
		100 - 500 m.	0	
_		>500 m.	0	
)F12 W	/ildlife Access	Draw a circle of radius of S km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pawermed (any width), swns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads
E40 D				hidden under forest canopy. [AM, SBM, STR]
	istance to Ponded /ater	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel
ľ		450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	-
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	1	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
	istance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
Pr	onded Water	than 8 hectares during most of a normal year is:		
		<100 m.	0	
		100 m - 1 km.	1	
		1 -2 km.	0	
		2-5 km.	0	1
		5-10 km.	0	-
E15 T	idal Provimity	>10 km. The distance from the AA edge to the eleccettidal water body (regardless of its calinity) is:	0	In Coogle Earth, measure the distance to the econo final disa Roy of Funds) or tidal store which we
F15 Ti	idal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
		10-40 km.	0	
E17 III	-1	>40 km.	0	[NR, SBM, Sens]
F IO U	pland Edge Contact	Select one:		[NR, SBW, Sells]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA 25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	1
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
	lood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the men
tic	dal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, [WSV]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some case: evees, upriver dams, or other measures may partly limit damage or risk from smaller events.	s 0	
		Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there iso infrastructure vulnerable	0	
)F18 Re	elative Elevation in	or her flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then		[FA, NR, Sens, SFSv, WCv, WSv]
W	/atershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.20	
W	/ater Quality Sensitive /atershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
	egraded Water pstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing.	0	1
		waters.	L.	
F24 F	ograded Met-	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The perhips desirable of the perhaps for the AA and	1	Nature outsing data or excellent units and of the state o
	egraded Water ownstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
		The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters.		
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
	/etland as a % of Its	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which		Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
Co	letland as a % of its ontributing Area Catchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or I using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland (site.) When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland	V	Topographic maps may be viewed online at the National Allas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
Co	ontributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or I using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:) ':	
Co	ontributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
Co	ontributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01 or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.) ':	
Co	ontributing Area	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or I using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	0	
C(C	ontributing Area (atchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 5.01 to 0.1 to 1. 5.1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 0 1 0 0	
C(C	ontributing Area Catchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: <pre>-0.0.1 or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.0.1 to 0.1. 1.1 to 1. 1. (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about: 10%.</pre>	0 0 1 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
C(C	ontributing Area (atchment)	Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. Thom a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusting procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: <0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise loop). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:	0 0 1 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	-
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	d d	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the set of the set of the
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 5 August 2020 Site Identifier: BB-W-01 Investigator: Derrick Mitcl

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

,,	to die	Condition of the		Definitions in 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Weltland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja lescn	ould also include part of i e the open water part adj cent " is used synonymoo bed features along their i	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should (acent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0 1	
		B1. B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the
		coniferous trees (may include lamarack) taller than 3 m. deciduous trees taller than 3 m.	4	trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		conferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
5	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM, INV, NR, PH, SBM, Sens]
	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:		
		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	0	
7	Large Snags (Dead	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.		
7	Large Snags (Dead Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0	at least 2 m tall. [POL, SBM, WBN]
7	Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tail. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

Size	(whichever has more). (whichever has more). (whichever has more). whichever has more). cushion many centimeters thick), including the moss obscured by tailer itime of the growing season. Viewed from directly above the ground layer, the under canopy anywhere in the vegetated AA. Ground is extensively stem densities, or plants with ground-hugging foliage. ces, but those areas comprise less than 5% of the unflooded parts of the ces, and those areas comprise more than 5% of the unflooded parts of the ent plants) covers all of the AA all the time. on of the AA that is always under water, the number of hummocks, small pits odepressions, and other areas of peat or mineral soil that are raised or ters surrounding them is:	0 0 0	Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens] Exclude moss growing on trees and rocks. [CS, PH] Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens] The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
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F14 Soil Texture In parts of the AA that lack persistent water, the texture of soil in t		0	
	he uppermost layer is mostly: [<i>To determine this, use a trowel to check in a</i>		[CS, NR, OE, PH, PR, Sens, SFS, WS]
,			
	"ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
between thumb and forefinger. Fines: includes silt, clay, silt, soils that make a ribbon longer than	2 cm when moistened, rolled, squeezed, and extended between thumb an	d 0	
forefinger.			
Deep Peat, to 40 cm depth or greater.		0	
Shallow Peat or organic <40 cm deep.	not make a ribban when maistaned ralled equacted and extended	0	
between thumb and forefinger.	not make a ribbon when moistened, rolled, squeezed, and extended	U	
	nt of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
Habitats unshaded waters shallower than 6 cm is: [Include also any area	that is adjacent to the AA.]		
None, or <100 sq. m. 100-1000 sq. m.		0	
1000 – 10,000 sq. m.		1	
>10,000 sq. m.		0	
F16 Herbaceous % of In aerial ("ducks eye") view, the maximum annual cover of herbaceous %	ceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
Vegetated Wetland <5% of the vegetated part of the AA or <0.01 hectare (whichever	is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
5-25% of the vegetated part of the AA.		0	
25-50% of the vegetated part of the AA. 50-95% of the vegetated part of the AA.		0	
>95% of the vegetated part of the AA.		0	
F17 Forb Cover Within parts of the AA having herbaceous cover (excluding SAV),	the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
<5% of the herbaceous part of the AA.		0	or others that lack showy flowers. [POL]
5-25% of the herbaceous part of the AA.		1	
25-50% of the herbaceous part of the AA.		0	
50-95% of the herbaceous part of the AA.		0	
>95% of the herbaceous part of the AA. F18 Sedge Cover Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy	P.	0	[CS]
			[55]
<5% of the vegetated area, or none. 5-50% of the vegetated area.		0	
50-95% of the vegetated area.		0	
>95% of the vegetated area.		0	1
F19 Dominance of Most Determine which two herbaceous species comprise the greatest	portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
Abundant Herbaceous aquatic plants). Then choose one of the following:			
Species those species together comprise > 50% of the areal cover of hert those species together do not comprise > 50% of the areal cover	, , , ,	0	
			[EC DL DOL Cons]
F20 Invasive Plant Cover How extensive is the cover of invasive plant species in the AA? If file.	For species, see Plants_invasive worksheet in the accompanying SuppInfo		[EC, PH, POL, Sens]
invasive species appear to be absent in the AA, or are present or		0	
invasive species are present in more than trace amounts, but cor woody).	nprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
invasive species comprise 5-20% of the herb cover (or woody co	ver, if the invasives are woodv).	0	
invasive species comprise 20-50% of the herb cover (or woody of		0	1
invasive species comprise >50% of the herb cover (or woody co	ver, if the invasives are woody).	0	
	ge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
Upland Edge species is:	s no unland edne	0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
none of the upland edge (invasives apparently absent), or AA has some (but <5%) of the upland edge.	э по аркани сиус.	1	
· · · · · · · · · · · · · · · · · · ·		0	
5-50% of the upland edge.		0	
5-50% of the upland edge. most (>50%) of the upland edge.	otated part of the wotland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
5-50% of the upland edge. most (>50%) of the upland edge. F22 Fringe Welland During most of the year, open water within or adjacent to the veg	etated part of the wettand is much wider than the maximum width of the	1	[**************************************
5-50% of the upland edge. most (<50%) of the upland edge. F22 Fringe Welland During most of the year, open water within or adjacent to the veg vegetated zone within the welland. Enter "1" if rue, "0" if false.	n-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]

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F24	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	1	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter "1" and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	1	
		20-50% of the AA. 50-95% of the AA.	0	-
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
	water triat is Sriaueu	<5% of the water is shaded, or no surface water is present then.	1	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	1	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	1
		0.5 - 1 m change. 1-2 m change.	0	
		>2 m change.	0	1
Is the a		water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter *1* in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA.is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	1	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	-
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	Proportions	One depth class that comprises 50-90% of the AA's inundated area.	1	
F04		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: -5% of the water, or it occupies <100 s.g.m.cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		5-30% of the water, or it occupies < 100 sq.m cumulativery. Nearly all the surface water is nowing. SKIP to F34.	0	1
		30-70% of the water.	0	1
		70-95% of the water.	1	
F32	Ponded Open Water - Minimum Size	>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	1	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0]
		5-30% of the ponded water.	0	1
		30-70% of the ponded water. 70-99% of the ponded water.	0	
		100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates		"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is: <1 m.	0	include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
		1 · 9 m.	0	,,
		10 - 29 m.	0	1
		30 - 49 m.	0	1
		50 - 100 m. > 100 m. or open water is absent at that time.	0	
F35	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a		If several isolated pools are present in early summer, estimate the percent of their collective shorelines
		slope less than about 5% measured within 5 m landward of the water) is:		that has such a gentle slope. [SR, WBN]
		<1% of the water edge. 1-25% of the water edge.	0	
		1-25% of the water edge. 25-50% of the water edge.	0	1
		50-75% of the water edge.	0]
		700 - 64	0	1
		>75% of the water edge.	0	
F36	Robust Emergents	3-73-b unlew water edge. The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmiles</i>), or tall (>1m) bulrush is:	0	Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
F36	Robust Emergents	-	0	Emergent vegetation is herbaceous plants whose slems are partly above and partly below the water surface during most of the time water is present. [WBN]
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmilles</i>), or tall (>1m) bullrush is: 41% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38. 1-25% of the emergent vegetation.	0	
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is caltail (<i>Typha</i> spp.), common reed (<i>Phragmiles</i>), or tall (>1m) bulrush is: <1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.		

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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	1	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter *1* and continue. If not, enter *0* and SKIP to F42 (Connection).	- 1	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:	0	wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pan, 17, 114, 1144]
E40	Indicated televid	Extensive.	0	BADAR
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilch, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of difches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult lopographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/loporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
544		drain the wetland artificially, or water is pumped out of the AA.		
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[wcv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	1	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1". Neither of above. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µSkcm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
E40	0 0 1 1 1 11	Neither of above	1	IFA FD DU CDM Core MDF MDM
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE): Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	0	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	0	
F50	Groundwater Strength	Onlinery decadase site characteristics above are deficient, and/or ansists a senied area or order area where beaver are rounterly removed. Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
		>10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.		
F52	Vegetated Buffer as %	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: 45%.	0	
		<%. 5 to 30%.	0	
		30 to 60%. 60 to 90%.	0	
		50 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type of cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
D # 01		1	ND DD C CD1
Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies > 10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
	<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	1
	2-5%.	0	
		0	
Olim Ol D I		1	D. C. I.
Cliffs or Steep Banks	In the AA of Winth I LUU m, there are elevated terresmal reatures such as clims, fatus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	1	
			1
		0	†
	Yes, but time of origin or expansion unknown.	0	1
	Unknown if new or expanded within 20 years or not.	0	
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	1
	Burned 6-10 years ago.	0]
	Burned 11-30 years ago.	0	
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility			[PU, STR, WBFv]
		0	
		1	
		0	
Non-consumptive		Ů	[PU, STR]
Uses - Actual or		0	
Potential	water and dense shrub thickets.	1	
	contiguous waters. Within or near the AA, there is an interpretive center, traits with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	trail.]		
			_
	-		
			1
	>95% of the AA with or without inhabited building nearby.	1	
Frequently Visited	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note		[AM, PH, PU, SBM, STR, WBF, WBN]
Area		1	
		0	
	50-95%.		1
	>95% of the AA.	0	1
BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boals, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0]
	Fishing.	0]
	Trapping of furbearers.	0	
		1	MD-3
Domestic Wells			[NRv]
	Within 0-100 m. of the AA.	0	
	100-500 m. away.	0	
		1	Tay and
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators (calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	0	[PH, PR]
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Unvisited Core Area Frequently Visited Area BMP - Soils BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	Side Stope The interpretation with pure provious surface from managed vegotiation, or all, both, one crops, unswerder could, disc. laterability. The stopes and analysis per provious surface from managed vegotiation, or all, both, one crops, unswerder could, disc. laterability. The stopes and managed and the stopes are stoped as a within 30 m of the AA edgs in other vedands. 25%.	imperious surface, og , panel rood parting Ixt, building opposed rood. Bas or nearly lare persons surface or managed registation cg., bean, nor crays, unpreed road, disc landside. Sulfer Slage Free Slope I and more durbated part of the yeard area that shall have not the welfand and cocapies > 10% of that updand area has a series of the common of the welfand and cocapies > 10% of that updand area has a series of the

FieldF form - Non-tidal Page 5 of 5

gator: Derrick Mitchell	Site Identifier: BB-W-01		ate: 5 August 2020
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2	
Aberrant Timing of Water Inputs	Tremande. Weer Action New B	Turiowick: Voloion 2.	
	a harmonia de destruira de contra incorta (hadenda a de contra de la decontra de la decontra de la decontra de		
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time.
Stormwater from impervious surfaces that drains directly to the wetla	and.		
Water subsidies from wastewater effluent, septic system leakage, sr	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other cor	sumptive use.		
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	ulates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	l ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).		
Logging within the wetland.	machinery livesteek fire drainings or off read vahioles		
Subsidence or compaction of the wetland's substrate as a result of r Straightening, ditching, dredging, and/or lining of tributary channels.	nachinery, livestock, file, drainage, or on road vehicles.		
If any items were checked above, then for each row of the table below	w assign points. However if you helieve the checked items had n	no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row
To estimate effects, contrast the current condition with the condition is		in measurable eneed on the timing of water continuous in any part of	and the second in the second in the following for
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within past	T		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
			Sum=
Accelerated Inputs of Contaminants and/or so In the last column, place a check mark next to any item - occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining shooting ranges snow store.	n either the wetland or its CA that is likely to have accelerated to landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
 high-intensity= extensive off-road vehicle use, plowing, grading soil or sediment. 	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	
	sessment Area n the wetland that is likely to have compacted, eroded, or otherwise a	ltered the wetland's soil. Consider only items occurring within pa.	st 100 years or since wetland was created or restored (whichever	
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BB-W-01

Date: 5 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.195989, -66.201301

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	1.99	Lower	0.42	Lower	3.26	0.50
Stream Flow Support (SFS)	5.83	Moderate	3.33	Moderate	3.11	1.94
Water Cooling (WC)	3.96	Moderate	4.25	Moderate	2.64	2.56
Sediment Retention & Stabilisation (SR)	3.11	Moderate	1.71	Lower	5.29	1.04
Phosphorus Retention (PR)	3.98	Moderate	8.23	Higher	5.73	7.78
Nitrate Removal & Retention (NR)	1.40	Lower	7.50	Higher	4.70	7.78
Carbon Sequestration (CS)	3.83	Moderate			6.21	
Organic Nutrient Export (OE)	6.90	Higher			5.99	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.08	Moderate	6.31	Higher	5.66	4.65
Amphibian & Turtle Habitat (AM)	5.93	Moderate	10.00	Higher	6.43	8.70
Waterbird Feeding Habitat (WBF)	9.61	Higher	6.67	Moderate	7.64	6.67
Waterbird Nesting Habitat (WBN)	6.28	Higher	6.67	Moderate	5.36	6.67
Songbird, Raptor, & Mammal Habitat (SBM)	10.00	Higher	10.00	Higher	8.44	10.00
Pollinator Habitat (POL)	9.68	Higher	10.00	Higher	7.80	10.00
Native Plant Habitat (PH)	9.50	Higher	10.00	Higher	6.92	8.75
Public Use & Recognition (PU)			2.48	Moderate		2.10
Wetland Sensitivity (Sens)			2.19	Lower		2.86
Wetland Ecological Condition (EC)			6.39	Moderate		7.92
Wetland Stressors (STR) (higher score means more stress)			10.00	Higher		6.93
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	5.83	Higher	0.42	Lower	3.26	0.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.41	Moderate	7.02	Moderate	5.85	6.65
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.17	Higher	5.47	Higher	5.17	3.85
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	6.98	Higher	7.33	Higher	5.76	6.55
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.86	Higher	10.00	Higher	8.08	9.79
WETLAND CONDITION (EC)			6.39	Moderate		7.92
WETLAND RISK (average of Sensitivity & Stressors)			6.10	Higher		4.90
	NOTE: A sees	o of 0 doos not				

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - BOF-W-01
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	10 September 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.157046
Longitude (decimal degrees):	-66.188806
ls a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.58
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including rox >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Meass tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	, , , , , , , , , , , , , , , , , , ,
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	1	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	- 1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, neavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sen:
		<50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	0 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	1	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of 'herbaceous vegetation']	1	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
•	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	1	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
7		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
7				
7		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover Percentage			In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		[* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are		
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land.	0	
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: <5% of the land. 5 to 20% of the land.	0	
		**NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 50 to 20% of the land. 20 to 60% of the land.	0 0	In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8		NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 10 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0 0	
8	Percentage	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land90% of the land. SKIP to OF10. Wilhin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Solve of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. (AM, PH, POL, SBM, Sens)
9	Percentage Type of Land Cover Alteration	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a S-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 20 to 60% of the land. 50% of the land. 50% of the land. 50% of the land. 50% of the land. SWIP to OF10. Wilthin the S-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM]
9	Percentage Type of Land Cover Alteration Distance by Road to	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Solve of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p
9	Percentage Type of Land Cover Alteration	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 5 to 90% of the land. 5 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM]
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 50 to 90% of the land. Wilhin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearespopulation center is: -100 m.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoN8's Draw & Measure tools Freehand Line to draw and measure the route. Settlements (click on Place Names) in menu) or other areas not close to mapped settlements but
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 90% of the land. 10 to 90% of the land.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures paguare kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route.
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 50 to 90% of the land. Wilhin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearespopulation center is: -100 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route.

	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Welfands layer in GeoNB (despite its omissions) to show surrounding welfands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for road which would find the compared to the CIVIL STID.
OE12	Distance to Ponded	The distance from the AA center to the elecest (but separate) pended water hady visible in CoogleEarth imagenrise		hidden under forest canopy. [AM, SBM, STR] In Google Earth, zoom in closely to examine the surrounding landscape for ponds, takes, and
UF 13	Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is: 450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	int sougle cain, zoom in closely to examine the surrounding landscape for portos, takes, and wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as w [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	†
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated. 0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m.	0	
		100 m - 1 km.	0	
		1 -2 km. 2-5 km.	0	
		5-10 km.	0	
		>10 km.	0	1
OF15	Tidal Proximity	The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	1	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	, , , , , , , , , , , , , , , , , , , ,
		5-10 km.	0	
		10-40 km.	0	
051/	Helend Edna Control	>40 km.	0	[NR, SBM, Sens]
UF 16	Upland Edge Contact	Select one: The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	(ivr, sow, sens)
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the AA	A 0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	1
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the me
	tidal Waters		0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data
		Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case:	0 s 0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		weeps uptiver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable to river flooding unrelated to lidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB. Watersheds KMZ file that accompanies this calculator. Then	1	[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's		. , , , , , , , , , , ,
		maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.25	
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0.25	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
		In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.		If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv.
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1- yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. (AM, FA, FR, NRv
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. (AM, FA, FR, NRv
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv
OF20	Watershed or Area Degraded Water Upstream	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (sforms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv
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OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0 0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 – no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downstope from the AA, and: The condition is present within 1 km downstope and connected to the AA by a channel.	0 0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present within the AA. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing water and the condition is present within 5 km downslope and connected to the AA by a channel.	0 0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR: PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 - no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is pres		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The romal to the AA by a channel water periods and times with high runoff (storms, snowmelf) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inade	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is pres		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20 OF21 OF22	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and ti		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20 OF21 OF22	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area (Catchment) Universetated Surface in	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 - no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AAA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area.		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]

DF24				
	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		The Salestian D.		
		Mostly true.	0	
		Somewhat true.	1	
		Mostly untrue.	0	
DF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	'	
_				
)F26	Internal Flow Distance (Path Length)	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inle
	(Pain Lengin)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		50 - 100 m. 100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
DF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Processes of any or more of the plant energial listed in the Plants. Para workshoot of the accompanying Consists file as the AA is within a	0	WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a mapped Atlantic Coastal Plain Flora Buffer	U	
		**	ļ	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.	ļ	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
DF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
_	Disab Dool 11 11	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
DF31	BIACK DUCK Nesting Area	III GUOQIE EALII, OPEN INE NIVE NIE NAL ACCOMPANIES INS CAICUIALO, CANEU DIACKDUCK. AUJUST ILS ANQUINIEN AND OPACITY. DETERMINE THE	U	
DF31	Black Duck Nesting Area		U	
DF31	BIACK DUCK Nesting Area.	in Google Earth, open the NMZ the that accompanies his calculator, caned blackbook. August its anythern and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 1-30 (enter 3). If outside of region shown in map, change toblank.	U	
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), =30 (enter 3). If outside of region shown in map, change toblank.		Ichai
	Wintering Deer or Moose	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), =30 (enter 3). If outside of region shown in map, change toblank.		[SBM]
DF32	Wintering Deer or Moose Concentration Areas	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on publicitrown land, in Google Earth open the KMZ file that a		[SBM]
DF32	Wintering Deer or Moose Concentration Areas Other Conservation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), s30 (enter 3), if Outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DearWinteringAreas.Otherwise: Enter: yes= 1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected		[SBM]
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Date: 10 September 2020 Site Identifier: BOF-W-01 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		They include incoocerulum, azaka, swainp ladier, redurienar, Ladiadon tea, and diress, wost require acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, butrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or dying up partly or entirely.	1	
AA sh includ " adja descri	ould also include part of e the open water part ad cent " is used synonymo bed features along their	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The life water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should lacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
F2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
F3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%. coniferous trees (may include tamarack) taller than 3 m.	0	huckleberry, cloudberry, sweetgale, adder, willow, brich, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees taller than 3 m.	0	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	0	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
Note :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	1	[PH, POL, SBM, Sens]
	Species	those species together do not comprise > 50% of such cover.	0	
F5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th
		coniferous, 1-9 cm diameter and >1 m tall.	0	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species. [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[Min, CS, POE, SDIN, Sells, WDN]
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	0	
		coniferous, 20-40 cm diameter.	0	
		broad-leaved deciduous 20-40 cm diameter.	0	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	0	
F6	Heinht Class	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	0	IAM INV NP PH SRM Sond
F6	Height Class Interspersion	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	0	[AM, INV, NR, PH, SBM, Sens]
F6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
F6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.	0 0 0	[AM, INV, NR, PH, SBM, Sens]
F6		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0 0 0	[AM, INV, NR, PH, SBM, Sens]
F6	Interspersion Large Snags (Dead	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are
F6	Interspersion	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0 0 1 0 0	
F6	Interspersion Large Snags (Dead	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than 87 hectare which exceed this diameter. Several (>8/thectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an
F6	Interspersion Large Snags (Dead Standing Trees)	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter > 20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) but above not true.	0 0 0 1 0 0	Snags are dead standing Irees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
F6 F7	Interspersion Large Snags (Dead	broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than 87 hectare which exceed this diameter. Several (>8/thectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1 0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
,	IN FIXEIS	is:		Do not include 14 liking algae of ilonorus. [FA, FR, IIIV, IIIV, IIIV, OE, FR, SBIII, SCHS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	1	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA.	Ü	
F12		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	THE REPORT OF THE PROPERTY OF
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
E12	Haland?	Several (extensive micro-topography).	0	TAM ND CDMI
F13	Upland Inclusions Soil Texture	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (c.g., wetland unland "messie" - 10% of the vegetated AA).	0	
		Many (e.g., wetland-upland "mosaic", > 10% of the vegetated AA). In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly. [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Son restare	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[65] 111, 62, 111, 11, 6613, 613, 110]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	_	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic < 40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		,, ,, ,, ,, ,, ,, ,, , ,, , ,
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	1	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or only state box strong notions. It only
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F10	Deminance -ft4/	>95% of the vegetated area.	0	For this question include force or well as graminoids and factor IEC INVIDED CO. 3
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	1
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
F20	ilivasive i laiit cover	file.		· · · · · · · · · · · ·
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody).	^	
		woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0 0	
F21	Invasive Cover Along	woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
F21	Invasive Cover Along Upland Edge	woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 5-50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is:	0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise -550% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	
F21		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. 5-50% of the upland edge.	0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0 0 0 1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge Fringe Wetland	woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but -5%) of the upland edge. 5-50% of the upland edge. During most (50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the vegetated zone within the wetland. Enter '1' if true, '0' if false.	0 0 0 1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR] [WBF, WBN, WCv]
	Upland Edge	woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the	0 0 0 1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]

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F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	onded (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water.	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: < 1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 m ponded water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1.7% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 2-75% of the water edge. 1-75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 1-25% of the water edge. 5-50% of the water edge. 1-55% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 m ponded water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1.7% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 2-75% of the water edge. 1-75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]

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37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
E	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
[Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blankel >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/loporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
43 (Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
44 1	Tributary Channel	is exported more quickly than usual que to diriches or pipes winnin the AA or connected to its outnet, or within 10 m of the AAs edge, which drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger	U	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
	, , , , , ,	permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
	I nput Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
			_	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
47 p	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
10		Neither of above	1	TEA ED DIL COM C WIDE WIDN
49 E	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE): Evident from direct observation or recesses of approach to the control of	0	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in yegetated areas near surface water.	0	
		Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	- 1	
	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
		Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	0	oullet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	1 0	large (longer than ~1 km), this may be estimated using Google Earth to determine the minimum and
		o-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
		nese questions are best answered by measuring from aerial images.		
idjacen 52	t. In many situations, the Vegetated Buffer as %	nese questions are best answered by measuring from aerial images. Within a zone extending 30 m talerally from the AAS edge with upland and/or other wellands, the percentage that contains perennial measured from the percentage representations and long designed long de		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
idjacen 52	t. In many situations, th		0	[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
idjacen 52	t. In many situations, the Vegetated Buffer as %	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%. 5 to 30%.	0	[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
idjacen 52	t. In many situations, the Vegetated Buffer as %	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: <5%.		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]

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F53	Type of Cover in Buffer	Within 30 m upslope of where the welland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type of cover in Bullet			,,
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
-54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands. 2-5%.	0	
		5-30%.	1	
		>30%.	0	
F55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
	·	that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).		
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	0	
		Yes, and created or expanded 20 - 100 years ago.	1	
		Yes, and created or expanded 3-20 years ago.	0	
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
-57	Burn History	More than 1% of the AA's previously vegetated area:	U	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Dum mistory	1 1 1	0	
		Burned within past 5 years. Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	1
		Burned >30 years ago, or no evidence of a burn and no data.	1	
-58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
	Visionity	public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25-50%.	0	
		>50%.	0	
F59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:		[PU, STR]
	Uses - Actual or	For an average person, walking is physically possible in (not just near) >5% of the AA during most of the growing season, e.g., free of deep	1	
	Potential	water and dense shrub thickets.		
		Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiguous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
F60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Nate: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		[AM, FAV, FRv, PH, PU, SBM, STR, WBF, WBN]
		than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	1
		5-50% and inhabited building is within 100 m of the AA.	0	1
		50-95%, with or without inhabited building nearby.	0	
		>95% of the AA with or without inhabited building nearby.	1	
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	4
F62	BMP - Soils	>95% of the AA. Rearchwalks, naved trails, fonces or other infrastructure and/or well enforced regulations appear to effectively properly visitors from walking on	0	[PH, PU]
		Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.		
F63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road wholkes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
F64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0]
		Trapping of furbearers.	0]
		None of the above.	1	
-65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	1
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	
F66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplinfo file for list of plant indicators (calciphiles). Enter 1 if more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to	0	[PH, PR]
		identify those and no information, change to blank.		

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gator: Derrick Mitchell	Site Identifier: BOF-W-01		ate: 10 September 2020	
essor (S) Data Form for Non-Ti	dal Wetlands. WESP-AC for New B	runswick Version 2		
Aberrant Timing of Water Inputs	dai richando. Vizor Ao for New B	Turiowick: Veroien 2.		
	likely to have caused the timing of water inputs (but not necessarily the	ir valuma) to shift by hours, days, or wooks, becoming oither more r	mutad (cmallar as loce fraquent peaks enread aver langer time	
	likely to have caused the timing of water inputs (but not necessarily thei. ishy (larger or more frequent spikes but over shorter times). [FA, FR, IN		nuteu (smaller or less frequent peaks spread over longer limes	
Stormwater from impervious surfaces that drains directly to ti	e wetland.			
Water subsidies from wastewater effluent, septic system leaf	age, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or of	ner consumptive use.			
Flow regulation in tributaries or water level regulation in adjoint	ning water body, or other control structure at water entry points that regu	ulates inflow to the wetland.		
A dam, dike, levee, weir, berm, or fill within or downgradien	t from the wetland that interferes with surface or subsurface flow in/ou	it of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, de	ad-end ditch.			
Artificial drains or ditches in or near the wetland.				
,	nternal channel (incised below the historical water table level).			
Logging within the wetland.				
· · · · · · · · · · · · · · · · · · ·	sult of machinery, livestock, fire, drainage, or off road vehicles.			
Straightening, ditching, dredging, and/or lining of tributary ch		no managements offers on the timing of water conditions in any part of	f the AA then leave the "O's" for the seems in the following rou	
	e below, assign points. However, if you believe the checked items had r dition if the checked items never occurred or were no longer present.	io measurable effect on the unling of water conditions in any part of	i uie AA, uien leave lite US Tot the Scores III the Tollowing fow	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
Score the following 2 rows only if the altered inputs began with	in past 10 years, and only for the part of the wetland that experiences the	nose.		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
riasilitess of filating.	,.,,		Sum=	
riasiiiress or muung.		T-		
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item - occ Stormwater or wastewater effluent (including failing septic sy	If or Salts uring in either the welland or its CA that is likely to have accelerated to stems), landfills, industrial facilities.		Stressor subscore=	
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item - occ Stormwater or wastewater effluent (including failing septic sy	I/or Salts Iring in either the wetland or its CA that is likely to have accelerated to		Stressor subscore=	
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item – occ Stormwater or wastewater effluent (including failing septic sy Metals & chemical wastes from mining, shooting ranges, sno	If or Salts uring in either the welland or its CA that is likely to have accelerated to stems), landfills, industrial facilities.		Stressor subscore=	
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item - occ Stormwater or wastewater effluent (including failing septic sy Metals & chemical wastes from mining, shooting ranges, snoppi/default.asp?lang=En&n=B8SA1846-1	It/or Salts wring in either the welland or its CA that is likely to have accelerated to stems), landfills, industrial facilities. w storage areas, oil/ gas extraction, other sources (download many local)		Stressor subscore=	
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item – occ Stormwater or wastewater effluent (including failing septic sy Metals & chemical wastes from mining, shooting ranges, snonpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roads if any items were checked above, then for each row of the tab.	It/or Salts It/or	tions from National Pollulant Release Inventory and view KMZ over	Stressor subscore= [R] rlay in Google Earth. https://www.ec.gc.ca/inrp-	
Accelerated Inputs of Contaminants and In the last column, place a check mark next to any item – occ Stormwater or wastewater effluent (including failing septic sy Metals & chemical wastes from mining, shooting ranges, snonpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roads if any items were checked above, then for each row of the tab.	If or Salts If or	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta gger present.	Stressor subscore= (R) rlay in Google Earth. https://www.ec.gc.ca/inrp- uminants and/or salls, then leave the "0's" for the scores in the	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
soil or sediment. Soil or Sediment Alteration Within the As.	sessment Area		Stressor subscore=	
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Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		
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Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table offects, contrast the current condition with the condition if the checked states of significant soil alteration in wetland: Recentness of significant soil alteration in wetland:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a compacted periods. The plants is graphic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. The plants is a compact point in the plants is a compact point in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present in the plants is a compact present. The plants is a compact present in the plants is a compact present	ported from another wetland. Not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.00
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present it is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mot Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause erd If any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods, and the particular periods are plants). In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. It is not to the checked items did recked items never occurred or were no longer present. Severe (3 points) Severe (3 points) Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: BOF-W-01

Date: 10 September 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.157046, -66.188806

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were

computed:						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	8.53	Higher	1.81	Lower	8.29	1.88
Stream Flow Support (SFS)	0.68	Lower	0.00	Lower	0.36	0.00
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	3.99	Moderate	1.60	Lower	5.89	0.97
Phosphorus Retention (PR)	4.41	Higher	1.24	Lower	6.03	1.46
Nitrate Removal & Retention (NR)	10.00	Higher	7.19	Moderate	10.00	7.50
Carbon Sequestration (CS)	3.44	Moderate			6.05	
Organic Nutrient Export (OE)	5.90	Higher			5.47	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	8.41	Higher	0.93	Moderate	6.83	1.74
Amphibian & Turtle Habitat (AM)	4.48	Moderate	1.94	Lower	5.67	3.27
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	5.79	Moderate	5.00	Moderate	4.80	5.00
Pollinator Habitat (POL)	6.57	Moderate	3.33	Moderate	5.29	3.33
Native Plant Habitat (PH)	6.23	Higher	5.15	Moderate	5.60	4.47
Public Use & Recognition (PU)			2.40	Moderate		2.04
Wetland Sensitivity (Sens)			4.62	Moderate		3.59
Wetland Ecological Condition (EC)			3.98	Moderate		6.53
Wetland Stressors (STR) (higher score means more stress)			3.53	Moderate		3.56
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	0.68	Lower	1.81	Lower	8.29	1.88
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	8.07	Higher	5.27	Moderate	8.50	5.41
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	6.08	Higher	0.62	Lower	5.00	1.16
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	2.69	Moderate	1.16	Lower	3.40	1.96
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	6.38	Moderate	4.83	Moderate	5.41	4.63
WETLAND CONDITION (EC)			3.98	Moderate		6.53
WETLAND RISK (average of Sensitivity & Stressors)			4.07	Moderate		3.57
WETLAND CONDITION (EC)			3.98 4.07	Moderate Moderate	s absent from t	;

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - FC-Trib1-W-03
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	5 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.190455
Longitude (decimal degrees):	-66.206848
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	1.16
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

_	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	- 1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spanial data oxists in a particular province.
		Prince Edward Island	0	1
		Newfoundland-Labrador	0	
	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	- 1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measr
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	1
	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	1	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		>100 hectares.	- 1	
1	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	1
		1 to 10 hectares.	0	1
		10 to 100 hectares.	0	1
		100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large	The minimum distance from the edge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
	Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	1 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	1
		0.5 - 5 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is > 10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to 0F7. If not, consider: The AA's vegetation cover is > 10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to 0F7. If not, consider: The AA's vegetation cover is > 10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1".	2	For this question only, consider moss to be herbaceous vegetation. Determine the score by view aerial imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
		[* NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		
7	Woody Uniqueness		2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
7	Woody Uniqueness	The AA's vegetation over is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted rows. [AMv, PHv, POLv, SBMv]
7	Woody Uniqueness	"herbaceous vegetation"] The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	2	
	Woody Uniqueness Local Vegetated Cover Percentage	The AA's vegetation: The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		rows. [AMv, PHv, POLv, SBMv]
	Local Vegetated Cover	The AA's vegetation: [7] The AA's vegetation cover is >10% woody but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
	Local Vegetated Cover	The AA's vegetation? The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land.	0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
	Local Vegetated Cover	The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazzed land, clearcuts, or confer plantations) is: <p>55% of the land.</p>	0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
	Local Vegetated Cover	The AA's vegetation: Over is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 5% of the land. 20 to 60% of the land.	0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
	Local Vegetated Cover	The AA's vegetation: [7] The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 5% of the land. 5 to 20% of the land. 60 to 90% of the land.	0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
8	Local Vegetated Cover Percentage	The AA's vegetation of some is 10% woody but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 510 20% of the land. 50 to 60% of the land. 590% of the land. 590% of the land.	0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Local Vegetated Cover Percentage	The AA's vegetation of the second of the sec	0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy
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8 9	Local Vegetated Cover Percentage Type of Land Cover Alteration Distance by Road to	The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations) is: 5% of the land. 20 to 60% of the land. 30% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p
9	Local Vegelated Cover Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	The AA's vegetation: [7] The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are hat is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: 5.5% of the land. 5.0 20% of the land. 5.0 10 60% of the land. 5.0 10 90% of the land. 5.0 10 90% of the land. 5.0 10 fe he lan	0 0 0 0 1	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS anal of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
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8	Local Vegelated Cover Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	The AA's vegetation of the second of the sec	0 0 0 1	rows. [AMv, PHv, POLv, SBMv] In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route.
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OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 · 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), Jawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as wel [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
0544	D	None of the above (the closest patches or corridors that large are >1 km away).	0	
UF 14	Distance to Large Ponded Water	The distance from the AA center to the closest (tull separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	1
		1 -2 km.	0	
		2.5 km.	1	
		5-10 km. >10 km.	0	1
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:	Ů	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m - 1 km.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
		10-40 km.	0	-
OF16	Upland Edge Contact	Select one:	Ů	[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
		will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non- tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
	tida Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case: levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas is no such mapping has been done locally), and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in	Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding uncleated to lidat sorm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then	'	[FA, NR, Sens, SFSv, WCv, WSv]
OF10	Water Quality Sensitive	determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB, Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.20	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Water Quality Seristive Watershed or Area Degraded Water	In Google Carit, open the Nnz, the Nnz, which shear Protected Area which accompanies this Calculator. The Art S whith Social and at-a. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	U	In all ACCEC reports available for this AA, it also may contain such micromation. [Intro] May use existing data, or sample those waters as part of this wetland assessment, "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	Tray, Sav, Stray Word, Word
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing.	0	1
		waters.		
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above isdownslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		moters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	1
		0.1 to 1.	1	
OF5-		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog).	0	
OF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landstides, and other mostly-bare surface is about: -10%.	1	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		10 to 25%.	0	
		10 to 23%.	U	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	4
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	1	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the self-self-self-self-self-self-self-self-
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Da	ite: 5 August 2020	Site Identifier: FC-Trib1-W-03	Investigator:	Derrick Mi	itche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

,,	to die	Condition of t	D	Definition In 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (<i>Carex rariflor</i> a). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclud ' adja lescn	ould also include part of it the open water part adj cent " is used synonymou bed features along their it	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should [acent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegelated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.	-	Decladous structs in this region tostady include duttinitions, Labriator lea, adjecting (worked), huckleberry, cranberry, cloudberry, sweetlgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 1	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the yes that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.	Ü	Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	- 1	
	Halahi Olasa	broad-leaved deciduous >40 cm diameter.	0	TAM INIV ND DIL COM Cores
	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
6		Sompriso to 70.70. Shouse betheen the and hark the choice man a tribite dayshing column. Shouse go to b boton.		
6		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.		
7	Large Snags (Dead	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	
7	Large Snags (Dead Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0	
7	Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 1 0	at least 2 m tall. [POL, SBM, WBN]
7		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

ľ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
	A FIXEIS	is:		DO NOT INCIDATE INTIME BY BEING BEIN
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
10 5	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
E	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
1	Γhatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	Sow, Serisj
		AA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	-
		AA.		
		Other conditions. Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	-
12 (Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,	Ů	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
	,	raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	1
		rew or note (minimal microtopography, < 1% or the failulinas such leadures, or entire AANs always water-covered). Intermediate.	1	
		Several (extensive micro-topography).	0	
F13 (Jpland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	1
		Intermediate (1 - 10% of vegetated part of the AA).	0]
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	(OC ND OF DIL DD C CFC NC)
F14 S	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	1
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
715 (Observation Fraudian	between thumb and forefinger.		This address and a few ship at all address and a late of a second and a second and a second and a second and a
	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Idolidio	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
1/	1	>10,000 sq. m.	0	TAMA WIDE WIDE
	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	3	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover). 5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	1
		>95% of the vegetated part of the AA.	0	
-17 F	orb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	-
		20-95% of the herbaceous part of the AA.	0	1
18 5	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	1
		5-50% of the vegetated area.	0	1
		50-95% of the vegetated area.	0]
		>95% of the vegetated area.	0	
	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
-20 II	nvasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		invasive species are present in more than trace amounts, but comprise <5% of neroaceous cover (or woody cover, if the invasives are woody).	U	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0]
	averative Care At	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	ff - lead id - Pff - id id - / id - Pff - VI - VI
21	nvasive Cover Along Jpland Edge	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
	Spianu Euge			4
	Spianu Euge	some (but <5%) of the upland edge.	0	
	Spiana Luge	some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
l		some (but <5%) of the upland edge. 5-50% of the upland edge. most (>50%) of the upland edge.	0	BURT HIRM NIC. J
l	Fringe Wetland	some (but <5%) of the upland edge. 5-50% of the upland edge.	0	[WBF, WBN, WCv]
F22 F		some (but <5%) of the upland edge. 5.50% of the upland edge. During most (-5.0%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	orided (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water.	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
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F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 700% of the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 10 of the ponded water. 10 -9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 ye me one water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: < 1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1 - 9 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 fibe part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: This percentage of the AA's water edge. 2-55-0% of the water edge. 50-75% of the water edge. 50-75% of the water edge.</td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: < 1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 1-25% of the water edge. 5-50% of the water edge. 1-55% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
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FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest paich of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter *1* and continue. If not, enter *0* and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E40	In elekt of feles of	Extensive.	0	DAMAN
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:	Ŷ	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44		drain the wetland artificially, or water is pumped out of the AA.	Ü	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
			_	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):	0	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
FEO	Croundy-t C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, CB, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE1	Internal Cradinat	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charaline clane. It is the about 125
F51	Internal Gradient	The gradient along most of the flow path within the AA is: < or the AA has no surface water outlet (not even seasonally).	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		4. Or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		TAM FA FD INV NDv DH DOL DDv CDM Cone CDv CTD M/DMI
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 to m, there are executed televation realizes such as callos, and a suppes, surean varies, or exercise pins (our interpretable extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

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gator: Derrick Mitchell	Site Identifier: FC-Trib1-W-03		Date: 5 August 2020			
essor (S) Data Form for Non-Ti	idal Wetlands. WESP-AC for New B	runswick Version 2				
Aberrant Timing of Water Inputs	The state of the s	Turiowick: Veroien 2.				
-	likely to have sourced the timing of water inputs (but not necessarily there)	ir valuma) to chiff by hours, days, or weeks, becoming either more to	mutad (amallar or loss frequent peaks aproad over langer times			
	s likely to have caused the timing of water inputs (but not necessarily then lashy (larger or more frequent spikes but over shorter times). [FA, FR, IN		nuteu (smailer of less frequent peaks spread over longer times			
Stormwater from impervious surfaces that drains directly to t	he wetland.					
Water subsidies from wastewater effluent, septic system lea	kage, snow storage areas, or irrigation.					
Regular removal of surface or groundwater for irrigation or o	ther consumptive use.					
Flow regulation in tributaries or water level regulation in adjo	ining water body, or other control structure at water entry points that regu	ulates inflow to the wetland.				
*	nt from the wetland that interferes with surface or subsurface flow in/ou	ut of the AA (e.g., road fill, wellpads, pipelines).				
Excavation within the wetland, e.g., dugout, artificial pond, d	ead-end ditch.					
Artificial drains or ditches in or near the wetland.						
,	internal channel (incised below the historical water table level).					
Logging within the wetland.						
	sult of machinery, livestock, fire, drainage, or off road vehicles.					
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "Os" for the scores in the following row						
	nie beiow, assign points. However, ir you believe the checked items had i ndition if the checked items never occurred or were no longer present.	io measurable effect on the unling of water conditions in any part of	i uie AA, uien leave lile US Iof the Scores In the Iollowing fow			
	Severe (3 points)	Medium (2 points)	Mild (1 point)			
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.			
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.			
Score the following 2 rows only if the altered inputs began with	hin past 10 years, and only for the part of the wetland that experiences th	hose.				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	_		
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.			
			Sum=			
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In the last column, place a check mark next to any item - occ Stormwater or wastewater effluent (including failing septic sy	urring in either the wetland or its CA that is likely to have accelerated to		[R]			
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.			
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.			
Other human-related disturbances within the CA.				
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
soil or sediment. Soil or Sediment Alteration Within the As.	sessment Area		Stressor subscore=	
Soil or Sediment Alteration Within the As:	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		
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Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present it is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mot Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause erd If any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods, and the particular periods are plants). In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. It is not to the checked items did recked items never occurred or were no longer present. Severe (3 points) Severe (3 points) Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: FC-Trib1-W-03

Date: 5 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.190455, -66.206848

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

5.43 2.81 0.00 7.56 5.24 2.75	Function Rating Higher Lower Lower Higher	Benefits Score (Normalised) 0.42 3.38 0.00	Lower Moderate Lower	(raw) 5.91 1.50	Benefits Score (raw) 0.50 1.97
2.81 0.00 7.56 5.24	Lower Lower Higher	3.38 0.00	Moderate	1.50	
0.00 7.56 5.24	Lower Higher	0.00			1.97
7.56 5.24	Higher		Lower		
5.24	U			0.00	0.00
		0.37	Lower	8.33	0.22
2.75	Higher	0.00	Lower	6.62	0.33
	Moderate	0.25	Lower	5.52	1.33
8.91	Higher			8.41	
5.71	Higher			5.36	
0.00	Lower	0.00	Lower	0.00	0.00
0.00	Lower	0.00	Lower	0.00	0.00
5.56	Moderate	0.76	Lower	5.83	1.66
2.90	Lower	3.02	Moderate	4.83	3.93
0.00	Lower	0.00	Lower	0.00	0.00
0.00	Lower	0.00	Lower	0.00	0.00
6.16	Moderate	6.67	Moderate	5.11	6.67
9.57	Higher	6.67	Moderate	7.71	6.67
6.06	Higher	7.48	Higher	5.53	6.49
		2.07	Lower		1.80
		0.00	Lower		1.79
		7.83	Higher		8.75
		0.22	Lower		2.34
2.81	Moderate	0.42	Lower	5.91	0.50
6.37	Higher	0.29	Lower	7.81	0.98
4.62	Moderate	2.38	Moderate	4.50	1.59
1.74	Lower	1.81	Lower	2.90	2.36
8.42	Higher	7.21	Higher	6.91	6.64
		7.83	Higher		8.75
		0.11	Lower		2.07
	8.91 5.71 0.00 0.00 5.56 2.90 0.00 6.16 9.57 6.06	8.91 Higher 5.71 Higher 0.00 Lower 0.00 Lower 5.56 Moderate 2.90 Lower 0.00 Lower 6.16 Moderate 9.57 Higher 6.06 Higher 2.81 Moderate 6.37 Higher 4.62 Moderate 1.74 Lower 8.42 Higher	8.91 Higher 5.71 Higher 0.00 Lower 0.00 Lowe	8.91 Higher 5.71 Higher 0.00 Lower 0.00 Lower 0.00 Lower 0.00 Lower 2.90 Lower 0.00 Lower 0.00 Lower 0.00 Lower 0.00 Lower 0.16 Moderate 9.57 Higher 6.67 Moderate 1.00 1.00 Lower 0.00 Lower 7.83 Higher 0.22 Lower 2.81 Moderate 0.42 Lower 4.62 Moderate 2.38 Moderate 1.74 Lower 1.81 Lower 4.62 Higher 7.21 Higher 7.83 Higher 7.21 Higher 7.83 Higher 7.21 Higher	8.91 Higher

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MCB2-W-03
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	10 September 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.161926
Longitude (decimal degrees):	-66.191334
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.67
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including rox >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Meass tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	, , , , , , , , , , , , , , , , , , ,
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	1	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, neavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sen:
		<50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape	0 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	1	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	1	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth after successively drawing or estimating the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, F POLv, SBMv, WBFv, WBNv]
•	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	1	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
7		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
7				
7		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Local Vegetated Cover Percentage			In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		[* NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are		
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land.	0	
		NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: <5% of the land. 5 to 20% of the land.	0	
		**NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 50 to 20% of the land. 20 to 60% of the land.	0 0	In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8		NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 10 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0 0	
8	Percentage	NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 500 wold in the land. 500 wold in the land. 500 wold in the land. 500 will in the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
8	Percentage Type of Land Cover	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Solve of the land. Solve of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. (AM, PH, POL, SBM, Sens)
9	Percentage Type of Land Cover Alteration	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a S-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 20 to 60% of the land. 20 to 60% of the land. 60 to 90% of the land. 50% of the land. SVIP to OF10. Wilthin the S-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 0 0	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM]
9	Percentage Type of Land Cover Alteration Distance by Road to	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) s: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 50% of the land. Solve of the land. Solve of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p
9	Percentage Type of Land Cover Alteration	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations) s: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 5 to 90% of the land. 50 to 90% of the land. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM]
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 50 to 90% of the land. Wilhin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearespopulation center is: -100 m.	0 0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoN8's Draw & Measure tools Freehand Line to draw and measure the route. Settlements (click on Place Names) in menu) or other areas not close to mapped settlements but
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 20 to 60% of the land. 50 to 90% of the land. 90% of the land. 10 to 90% of the land.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] *Population center* means a settled area with more than about 5 regularly- inhabited structures paguare kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool- Freehand Line to draw and measure the route.
9	Percentage Type of Land Cover Alteration Distance by Road to Nearest Population	NOTE: woody cover = trees & shrubs taller than 1 m.) Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land. 5 to 20% of the land. 5 to 20% of the land. 5 to 90% of the land. 50 to 90% of the land. Wilhin the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearespopulation center is: -100 m.	0 0 0 0 1	of an appropriate land cover layer. [AM, PH, POL, SBM, Sens] [AM, SBM] "Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route. Or use the GeoNB's Draw & Measure tools - Freehand Line to draw and measure the route.

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	1	
		50 - 100 m. 100 - 500 m.	0	-
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01.10	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as we [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	1
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m. 100 m - 1 km.	0	-
		1 - 2 km.	0	
		2-5 km.	- 1	
		5-10 km.	0]
0545	Tidal Davida "	>10 km.	0	Cook Falls and the distance to the cook of
JF 15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km. 1 - 5 km.	0	information if available may be preferable. [FA, WBF]
		5-10 km.	0	1
		10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	
		1.25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA 25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
0517	Claud Danson from Nam	will be true for most assessments done with WESP-AC.		In the Coalification of the State of the Sta
OF I /	tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data
		Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases	0	box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		evees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	o river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AXS approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's	0.35	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.33	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
	Watershed or Area	Enter 1= yes, 0= no.		
OF20	Degraded Water Upstream	Sampling Indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The appelling is present within the A.A.	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shoul be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	1
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	
		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AM may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding and/or to using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	1
		0.1 to 1.	1	
OF22	Unwagatatad Curface In	11 (welland is larger than its catchment (e.g., welland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raisee loog). 10 properties of the AA's contribution area (properties) to personal than 1,000 properties of the AA's contribution area (properties) to personal than 1,000 properties of the AA's contribution area (properties).	0	ICA IMV NDv DDv SDv STD WGv WSvi
	Unvegetated Surface in	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
UF23	the Contributing Area	<10%.	0	
UF23	the Contributing Area	<10%. 10 to 25%.	0	

DF24				
	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		The Salestian D.		
		Mostly true.	0	
		Somewhat true.	1	
		Mostly untrue.	0	
DF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	'	
_				
)F26	Internal Flow Distance (Path Length)	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inle
	(Pain Lengin)	<10 m.	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		10 - 50 m.	0	
		50 - 100 m.	0	
		50 - 100 m. 100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
DF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
DF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Processes of any or more of the plant energial listed in the Plants. Para workshoot of the accompanying Consists file as the AA is within a	0	WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a mapped Atlantic Coastal Plain Flora Buffer	U	
		**	ļ	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.	ļ	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
DF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
_	Disali Disali II. II.	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
DF31	BIACK DUCK Nesting Area	III GUOQIE EALII, OPEN INE NIVE NIE NAL ACCOMPANIES INS CAICUIALO, CANEU DIACKDUCK. AUJUST ILS ANQUINTEN AND OPACITY. DETERMINE THE	U	
DF31	Black Duck Nesting Area		U	
DF31	BIACK DUCK Nesting Area.	in Google Earth, open the NMZ the that accompanies his calculator, caned blackbook. August its anythern and opacity. Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 5-30 (enter 3). If outside of region shown in map, change toblank.	U	
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), =30 (enter 3). If outside of region shown in map, change toblank.		Ichai
	Wintering Deer or Moose	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), =30 (enter 3). If outside of region shown in map, change toblank.		[SBM]
DF32	Wintering Deer or Moose Concentration Areas	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on publicitrown land, in Google Earth open the KMZ file that a		[SBM]
DF32	Wintering Deer or Moose Concentration Areas Other Conservation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), s30 (enter 3), if Outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DearWinteringAreas.Otherwise: Enter: yes= 1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected		[SBM]
DF32	Wintering Deer or Moose Concentration Areas	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	0	
DF32	Wintering Deer or Moose Concentration Areas Other Conservation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on publicirown land, in Google Earth open the KMZ file that accompanies this report called NB_Deerl/VinleringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCCC) for its exceptional ecological features or highly Intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are	0	
DF32	Wintering Deer or Moose Concentration Areas Other Conservation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	0	
DF32 DF33	Wintering Deer or Moose Concentration Areas Other Conservation Designation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_Deer/WinleringAreas.Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC ar agencies for more recent information.	0	[PU]
DF32 DF33	Wintering Deer or Moose Concentration Areas Other Conservation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on publicirown land, in Google Earth open the KMZ file that accompanies this report called NB_Deerl/VinleringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCCC) for its exceptional ecological features or highly Intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC are	0	
DF32 DF33	Wintering Deer or Moose Concentration Areas Other Conservation Designation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
DF32 DF33	Wintering Deer or Moose Concentration Areas Other Conservation Designation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on publicirown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinleringAreas. Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to Identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC ar agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change tablank (not 0).	0	[PU]
DF32 DF33	Wintering Deer or Moose Concentration Areas Other Conservation Designation	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC ar agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
DF32 DF33 DF34 DF35	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Miligation Investment	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 30 (enter 3). If outside of region shown in map, change to blank. If AA is on private land with no information, change to blank (not 0). If on publicicrown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes=1, no=0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly infact natural conditions. Enter: yes=1, no=0. If uncertain, consult NCC an agencies for more recent information. The AA is part of or condiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes=1, no=0. If no information, change to blank. The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank.	0	[PU] [PU]
DF32 DF33 DF34 DF35	Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Miligation Investment	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), <a by="" e.g.,<="" href="https://doi.org/10.10/10/10/10/10/10/10/10/10/10/10/10/10/1</td><td>0</td><td>[PU]</td></tr><tr><td>DF32 DF33 DF34 DF35</td><td>Wintering Deer or Moose Concentration Areas Other Conservation Designation Conservation Investment Miligation Investment</td><td>predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), -30 (enter 3). If outside of region shown in map, change toblank. If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0. With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tablank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information, change tablank or the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends</td><td>0</td><td>[PU]
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Concentration Areas Other Conservation Designation Conservation Investment Milligation Investment Sustained Scientific Use</td><td>predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: -10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), 30 (enter 3). If outside of region shown in map, change toblank. If AAIs on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that accompanies this report called NB_DeerWinteringAreas Otherwise: Enter: yes= 1, no= 0. With GeoNB, Click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are agencies for more recent information. The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tablank (not 0). The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank. Plants, animaks, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change tablank.</td><td>0 0 0</td><td> PU
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Date: 10 September 2020 Site Identifier: MCB2-W-03 Investigator: Derrick Mitcl

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to disease on	Condition Chaires	D-4-	Definition / Fundament
#	Indicators	Condition Choices	Data	Definitions/Explanations
-1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., b.og cranberry, pitcher plant, surdew, orchicls). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	1	
		the AA should include all persistent waters in ponds smaller than 8 hectares (~283 m on a side) that are adjacent to the AA. The		
includ " adja descn	e the open water part adj cent " is used synonymo bed features along their i	the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question FT might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	0	accessing to the second
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	5	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
<u>Note</u> :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.	Ü	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th
		coniferous, 1-9 cm diameter and >1 m tall.	0	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species. [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	0	[Mill, CS, FOE, Sbill, Sells, Wbill]
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	0	
		broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	0	
		broad-leaved deciduous >40 cm diameter.	0	
	Height Class	Follow the key below and mark the ONE row that best describes MOST of the AA:		[AM, INV, NR, PH, SBM, Sens]
6	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each		
6		comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6		, , ,	0	
6		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely		
-7	Large Snags (Dead	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	
7	Large Snags (Dead Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
77		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 1 0	
77		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	at least 2 m tall. [POL, SBM, WBN]
7	Standing Trees)	A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]

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FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
,	IN FIXEIS	is:		bo not include training algae of ilcricats. [FA, FR, HVV, HVV, O.E., FR, SSIII, SCIIS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	1	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds animal burrows ruls gullies natural levees microdenressions, and other areas of next or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
		Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0]
F1.4	Call Taytor	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	ICC MD OF DILDD Cope CFC MC!
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	1	
		forefinger. Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	0	1
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
FAF		between thumb and forefinger.		The state of the s
F15	Shorebird Feeding Habitats	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	i idbitat3	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	rogotatoa vvottaria	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA.	0	1
		50-95% of the herbaceous part of the AA. >95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	U	[CS]
	-9	<5% of the vegetated area, or none.	0	Ţ ·
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	n	
	ореско	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. Those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
E20	Invasive Direct C	How extensive is the cover of invasive plant species in the AA? For species, see Plants invasive worksheet in the accompanying Supplinfo		[EC DL DOL Sans]
F20	Invasive Plant Cover	now exensive is the cover of invasive plant species in the AAY For species, see Marits_Invasive worksheet in the accompanying Supplino file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	1
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	1
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
_		a normal year.	I	

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F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	onded (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water.	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 1-25% of the water edge. 5-50% of the water edge. 1-55% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
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FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
F39	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
137	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCV, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the welland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" welland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	1	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
544		drain the wetland artificially, or water is pumped out of the AA.	U	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	1	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.		
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	1	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairty straight channels. Bumps into tree trunks and/or shrub stems and follows a fairty indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes
		Was measured, and is: [enter the reading in the column to the right.] Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate	0	or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	Neither of above. Enter "1". The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1". Neither of above	0	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
55.	0 1 : 1	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly – do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations abong streams during each writer. IAM CS EA EP INV NP OF PH DPV SES WIC WSI.
		Most of the AA has a slope of -5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is -5.5.	0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		<2% or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
Note for	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	SR, WBF, WBN, WS]
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		TAM ES ED INVAID. DU DOL DO COM C. CO. CO. CO.
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.		

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Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
Type or cover in Buner	, , , , , , , , , , , , , , , , , , , ,		
	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
D # 01		0	ND DD C CD1
випег Ѕюре	The steepest and/or most disturbed part of the upland area that is within 30 m of the welland and occupies > 10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
	<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
	2-5%.	0	1
	5-30%.	1	
	>30%.	0	
Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, fatus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	Do not include upturned trees as potential den sites. [POL, SBM]
New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
	No.	0	
		0	
			1
			1
	Unknown if new or expanded within 20 years or not.	0	
Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Burned within past 5 years.	0	1
	Burned 6-10 years ago.	0	1
	Burned 11-30 years ago.	0	1
	Burned >30 years ago, or no evidence of a burn and no data.	1	
Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		_	
			4
		1	
Non-consumptive			[PU, STR]
Uses - Actual or		- 1	
Potential	water and dense shrub thickets.		
	contiguous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises. [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
	part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more		
	<5% and no inhabited building is within 100 m of the AA	0	
			1
	5-50% and no inhabited building is within 100 m of the AA.	0	1
	5-50% and inhabited building is within 100 m of the AA.	0	1
	50-95%, with or without inhabited building nearby.	0	
	>95% of the AA with or without inhabited building nearby.	1	
			[AM, PH, PU, SBM, STR, WBF, WBN]
Alea	P 1 1 4	1	
	5-50%.	0	
	50-95%.	0	1
	>95% of the AA.	0	1
BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
BMP - Wildlife Protection	Fences, observation blinds, platforms, paved traits, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
	Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
	Waterfowl hunting.	0]
	Fishing.	0]
	Trapping of furbearers.	0	
		1	(ND.)
Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
	Within 0-100 m. of the AA.	0]
	100-500 m. away.	0	
		1	(nu pp)
Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants. Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
	Buffer Slope Cliffs or Steep Banks New or Expanded Wetland Burn History Visibility Non-consumptive Uses - Actual or Potential Unvisited Core Area Frequently Visited Area BMP - Soils BMP - Wildlife Protection Consumptive Uses (Provisioning Services)	Side Stope The interpretation with pure provious surface from managed vegotiation, or all, both, one crops, unswerder could, disc. laterability. The stopes and analysis per provious surface from managed vegotiation, or all, both, one crops, unswerder could, disc. laterability. The stopes and managed and the stopes are stoped as a within 30 m of the AA edgs in other vedands. 25%.	imperious surface, og , panel rood parting Ixt, building opposed rood. Bas or nearly lare persons surface or managed registation cg., bean, rosk crays, uppared road, disc landside. The Stoppos and more discharded part of the year and any of the swiften and ecocypies > 10% of that uphand area has a series of the company of the swiften and ecocypies > 10% of that uphand area has a series of the swiften and ecocypies > 10% of that uphand area has a series of the swiften and ecocypies > 10% of that uphand area has a series of the swiften of the swiften and ecocypies > 10% of that uphand area has a series of the swiften of the swiften and ecocypies > 10% of that uphand area has a series of the swiften and the swiften area are swiften and the swiften area area are swiften and the swiften area area are swiften and the swiften area are swiften area area area area area area area ar

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igator: Derrick Mitchell	Site Identifier: MCB2-W-03	D	Date: 10 September 2020	
essor (S) Data Form for Non-Ti	dal Wetlands. WESP-AC for New Bi	runswick. Version 2.		Dat
Aberrant Timing of Water Inputs				Dat
· · · · · · · · · · · · · · · · · · ·	likely to have caused the timing of water inputs (but not necessarily their	r valuma) to chift by hours, days, or weeks, becoming either more	mutad (cmaller or locs fraguent neaks caread over langer time	
	shey to have caused the timing of water inputs (but not necessarily their shy (larger or more frequent spikes but over shorter times). [FA, FR, IN\		nuteu (smaller of less frequent peaks spread over longer time.	
Stormwater from impervious surfaces that drains directly to the	e wetland.			1
Water subsidies from wastewater effluent, septic system leaka	uge, snow storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or oth	er consumptive use.			
	ning water body, or other control structure at water entry points that regu			
	from the wetland that interferes with surface or subsurface flow in/out	t of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, dea	ad-end ditch.			1
Artificial drains or ditches in or near the wetland.	At a second second second below the bistories to the best second as			
Accelerated downcutting or channelization of an adjacent or in	Jernal channel (incised below the historical water table level).			
Logging within the wetland. Subsidence or compaction of the wetland's substrate as a res	ult of machinary livestack fire drainage or off read vehicles			
Straightening, ditching, dredging, and/or lining of tributary cha				
	e below, assign points. However, if you believe the checked items had n	no measurable effect on the timing of water conditions in any part o	of the AA then leave the "O's" for the scores in the following row	
	dition if the checked items never occurred or were no longer present.	o measurable cheek on the timing of valor conditions in any part of	rane ran, and recare the estimate and section arrange removing res	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	
, ,	in past 10 years, and only for the part of the wetland that experiences th			
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
			Sum=	
			Stressor subscore=	0.
Accelerated Inputs of Contaminants and	/or Salts		Stressor subscore-	0.
	Vor Salts rring in either the wetland or its CA - that is likely to have accelerated th	he inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S]		0.
In the last column, place a check mark next to any item occu	rring in either the wetland or its CA that is likely to have accelerated th	he inputs of contaminants or salts to the AA. [AM, FA, PH, POL, S]		0.
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]					
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.							
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.								
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			1				
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.							
Other human-related disturbances within the CA.								
	elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	1				
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	3				
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	2				
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.					
* high-intensity= extensive off-road vehicle use, plowing, grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	6				
soil or sediment.			Juli-					
	sessment Area		Stressor subscore=	0.50				
soil or Sediment Alteration Within the Ass	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa	Stressor subscore=					
soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa	Stressor subscore=					
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soil or sediment. Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native)	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.		Stressor subscore=					
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). (CS, NW, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero: If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checks.	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of th	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	Stressor subscores st 100 years or since welland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of welland and <5% of its upland edge (if any).					
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the che	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of the property of the property of the property of the plants in the plants is plants. It plants is plants in the property of the property of the plants of topsoil in the plants	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	Stressor subscores st 100 years or since welland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of welland and <5% of its upland edge (if any). >1 yr ago.					
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouteveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause so Artificial water level or flow manipulations sufficient to cause ero If any items were checked above, then for each row of the table befiects, contrast the current condition with the condition if the checked specific contrast the current condition with the condition if the checked place is significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. It plants). It plants). It plants). It plants is plants is plants in the property of th	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	Stressor subscores st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.					

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MCB2-W-03

Date: 10 September 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.161926, -66.191334

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

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Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	4.43	Moderate	3.95	Moderate	5.14	4.00
Stream Flow Support (SFS)	1.09	Lower	0.00	Lower	0.58	0.00
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	5.78	Higher	2.01	Lower	7.11	1.22
Phosphorus Retention (PR)	4.16	Moderate	1.11	Lower	5.86	1.33
Nitrate Removal & Retention (NR)	2.88	Moderate	10.00	Higher	5.61	10.00
Carbon Sequestration (CS)	6.49	Higher			7.36	
Organic Nutrient Export (OE)	3.50	Moderate			4.19	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	7.12	Higher	0.94	Moderate	6.38	1.75
Amphibian & Turtle Habitat (AM)	4.64	Moderate	1.01	Lower	5.75	2.70
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	5.76	Moderate	3.33	Moderate	4.77	3.33
Pollinator Habitat (POL)	7.32	Moderate	3.33	Moderate	5.90	3.33
Native Plant Habitat (PH)	5.17	Moderate	5.38	Moderate	5.17	4.67
Public Use & Recognition (PU)			3.02	Moderate		2.48
Wetland Sensitivity (Sens)			2.04	Lower		2.81
Wetland Ecological Condition (EC)			3.01	Lower		5.97
Wetland Stressors (STR) (higher score means more stress)			5.07	Higher		4.12
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	1.09	Lower	3.95	Moderate	5.14	4.00
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	5.03	Moderate	7.19	Moderate	6.92	7.09
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	5.03	Moderate	0.63	Lower	4.58	1.17
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	2.78	Moderate	0.60	Lower	3.45	1.62
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	6.70	Moderate	4.70	Moderate	5.59	4.22
WETLAND CONDITION (EC)			3.01	Lower		5.97
WETLAND RISK (average of Sensitivity & Stressors)			3.55	Moderate		3.47
	NOTE: A coor	o of O door not	maan tha funa	tion or bonofit i	e abcont from t	an wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - MC-W-02
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	5 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.181689
Longitude (decimal degrees):	-66.187034
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	2.39
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador (2)	0	
DF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
DF3	Ponded Water &	100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only
JI 3	Wetland Within 1 km.	1 km is:		the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	4
		1 to 10 hectares.	0	4
		10 to 100 hectares. >100 hectares.	0	
)F4	Size of Largest Nearby	> 100 nectares. The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Comuci	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	4
		1 to 10 hectares. 10 to 100 hectares.	0	4
		100 to 1000 hectares. 100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
DF5	Distance to Large Vegetated Tract	Proto in locators, Trans to meanly aways are answer in returning underenoper amuscapes; The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
	3	450 m, and not separated from the 375-ha vegetated area by any width olpaved roads, stretches of open water, row crops, bare ground, awn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscaps.]	1 es.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	-
05/		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
DF6	Herbaceous Uniqueness	The AA's vegetation cover is > 10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to 0F7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to 0F7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1".	7	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PHv POLv, SBMv, WBFv, WBNv]
		[* NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		
DF7	Woody Uniqueness	The AA's vegetation cover is >10% woody' but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining an that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	1
		5 to 20% of the land.	0	
		20 to 60% of the land.	0	1
		60 to 90% of the land.	0	
)FC	Tuno of Land Course	>90% of the land. SKIP to OF10.		[AM CDM]
OF9	Type of Land Cover Alteration	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	, moration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0]
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
JF10	Nearest Population	<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
JF10	Center			aroute. Or use the george's praw a measure tour? Freehally Line to gray and niedsure the route to
JF10	Center	100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to manned settlements but
JF10	Center	100 - 500 m. 0.5- 1 km.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
JF10	Center			

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01 13	Water	450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as we [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	1
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	-
		2-5 km.	1	
		5-10 km.	0	1
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		in Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	closer. If you need to see now far upriver a river is tidal, see the kinz life provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		10-40 km.	0	1
		>40 km.	0	1
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA. This	1	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood modeling, [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there ino infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	lo river flooding unrelated to lidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AAS approximate elevation (bottom right, NOT the "eye att"). Then move cursor around to determine the watershed's	0.15	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Watershed or Area Degraded Water	Enter 1= yes, 0= no. Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
UF2U	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:	0	way use existing data, or sample index waters as part or this wettain assessment. Faithful should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water Downstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstiediil	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
0555		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which Am may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	
		0.1 to 1.	1	
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised body. The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots	0	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
OE22	Unvogotated Curface in			TACAN AND TANK TANK TANK TANK TANK TANK TANK TANK
OF23	Unvegetated Surface in the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about :	1	
OF23			1 0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest, (e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		This section is.		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OFOE	A	-		[AM AID CEC INC INC]
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	0	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).	1	
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
0120	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	,	<10 m.	0	, , , , , , , , , , , , , , , , , , ,
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEL GrowingDegreeDays. Place your cursor over the AA	Ů	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
UF21	Growing Degree DayS	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PET_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	Inis layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
0555	F. I. A.	1.1.1		
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	1	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	pany
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.	Ů	
		Is probably is not accessed by any anadromous fish species but is known or likely to havether fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation			Request information from ACCDC and/or conduct your own survey at an appropriate season using a
UF29	Concern	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	Concern			WBNv]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WDW)
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshee	0	
		of the accompanying SuppInfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
0131	Didok Duck Nesting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		This was provided by Dr. David Leske. [WDIW]
		>30 (enter 3). If outside of region shown in map, change to blank .		
				Zenra)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
			L	
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC are		
		agencies for more recent information.	L	
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change the lank (not		
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
	330	the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	1	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
OE27	Calcaroous Posion	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	_	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF3/	Calcareous Region		0	If GIS is available, you may use the Bedrock Geology snapetile obtainable at http://www.snb.ca/qeonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change tolank.		Internative Service (Carlo report at a long up of the Carlo report and t
		mater to the control (p. 1. to account years of a paper train of the Manual. If no map coverage, change wealth.		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltere		
		conditions.	L	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
				1
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 5 August 2020 Site Identifier: MC-W-02	Investigator: Derrick Mitche
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	neath r	Condition of the	D	Definition In 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welfand surface and surrounding landscape are seldom sloping and welfand often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
NA sh nclud adja lescn	ould also include part of a le the open water part adj cent " is used synonymo libed features along their a	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegelated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
2	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.	-	becludous sinus in linis region usuary include trainingship, Laurious et a Judycery (information), huckleberry, carbatery, doubdery, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 1	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Index species together on no comprise > 30% or sour over: Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 1-9 cm diameter and >1 m tall.	1	
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		proad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1	
		broad-leaved deciduous >40 cm diameter.	0	
6	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	1	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
		D F31 d		
		B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and 62 and mark the choice with a 1 in the adjoining column: 11 The lose provided height face is morettle excitored and identificial within the consideration.	C	
			0	
7	Large Snags (Dead	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely		
7	Large Snags (Dead Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at at least 2 m tall. [POL, SBM, WBN]
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]
7	Standing Trees)	class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than B/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0	at least 2 m tall. [POL, SBM, WBN]

FieldF form - Non-tidal Page 1 of 5

F0	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NYINKING BIGGE OF INCIDENS. [FA, FR, NAV, NAV, OE, FT, SDW, SENS]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
				SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA.		
		Other conditions. Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	-
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,	Ů	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
	3, 1	raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate. Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:	Ĭ	[AM, NR, SBM]
	opiala maasions	Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA).	0	
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	1
		forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep. Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.	ı o	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]	- 1	
		None, or <100 sq. m. 100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	
		>10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA. >95% of the vegetated part of the AA.	0	-
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	0	1
	Sadaa Cayar	25-50% of the herbaceous part of the AA.	0	1
		50-95% of the herbaceous part of the AA.	0	1
E10		>95% of the herbaceous part of the AA.	0	ice)
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	1
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	1
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous	aquatic plants). Then choose one of the following:		
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. Those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
E0.*			Ŭ	ITO DU DOL G I
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
				1
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0 0	
F21	Invasive Cover Along	invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an explic
F21	Invasive Cover Along Upland Edge	invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0 0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge.	0 0 0 0	
F21		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0 0 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. 5-50% of the upland edge.	0 0 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge	Invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. 5-50% of the upland edge. 5-50% of the upland edge. most (<50%) of the upland edge.	0 0 0 0	species, assume the unidentified plant to also be exolic. If vegetation is so senesced that exolic species cannot be identified, answer "none". [PH, STR]
F21		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. 5-50% of the upland edge.	0 0 0 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge	invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody). Invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the	0 0 0 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar: [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.
	Water	Water is: Near The AA dries up completely (so water in change); either) or pour has surface water during most years. SVID to E27.	0	[AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA.	0	
		20-50% of the AA.	0	
		50-95% of the AA.	0	
F26	% of Summertime	>95% of the AA. True for many fringe wetlands. At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are	0	[FA, WC]
	Water that Is Shaded	within the AA at that time is:		. ,
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	OC, 111, SIS, WOI, WOI, WO]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	roportions	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	U	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		3-30% of the water.	0	
		70-95% of the water.	0	
		>95% of the water.		
F32	Ponded Open Water -	In	0	
	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or enlirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4It the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
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FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[AW, FA, FK, 11VV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, dilch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]	0	passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Series in st. applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Audited to these chiefla shirtly - out hot use personal puginent based of her continuors, pr., or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
	cma Gradietti	The gradient along most of the new part within the AA is. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		> 70.70, or all the area within 30 m of the AM edge is offiel Welldhus. 3Nit to F33.		

FieldF form - Non-tidal Page 4 of 5

53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Buner			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 on, interest are expensed terrestation readines such as callos, made subjects, suream contrast, or exercised pins Quintingrapy that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 nor of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

FieldF form - Non-tidal Page 5 of 5

igator: Derrick Mitchell	Site Identifier: MC-W-02	U	ate: 5 August 2020			
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2				
Aberrant Timing of Water Inputs	Wednesday Week Action New B	Turiowick: Veroien 2.				
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuteu (smaller of less frequent peaks spread over longer time			
Stormwater from impervious surfaces that drains directly to the wetla	and.					
Water subsidies from wastewater effluent, septic system leakage, sn	now storage areas, or irrigation.					
Regular removal of surface or groundwater for irrigation or other con-	isumptive use.					
Flow regulation in tributaries or water level regulation in adjoining water body, or other control structure at water entry points that regulates inflow to the wetland.						
A dam, dike, levee, weir, berm, or fill within or downgradient from the wetland that interferes with surface or subsurface flow in/out of the AA (e.g., road fill, wellpads, pipelines).						
Excavation within the wetland, e.g., dugout, artificial pond, dead-end ditch. Artificial drains or ditches in or page the wetland.						
Artificial drains or ditches in or near the wetland.						
Accelerated downcutting or channelization of an adjacent or internal channel (incised below the historical water table level).						
Logging within the wetland.						
Subsidence or compaction of the wetland's substrate as a result of machinery, livestock, fire, drainage, or off road vehicles. Straightening, disching, deading, and/or liping of tributen channels.						
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "O's" for the scores in the following row						
To estimate effects, contrast the current condition with the condition if		to measurable effect on the liming of water continions in any part of	are full, their leave the 03 for the scores in the following for			
	Severe (3 points)	Medium (2 points)	Mild (1 point)			
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.			
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.			
Score the following 2 rows only if the altered inputs began within past						
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.			
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.			
			Sum=			
			Strassor subscara-			
Accelerated Inputs of Contaminants and/or \$ In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chamical wastes from minion shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.					
In the last column, place a check mark next to any item occurring in	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.		RJ			
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; $\textbf{low}\text{-}\text{intensity}\text{=}\text{veg}$	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
soil or sediment.			Stressor subscore=	0.00
soil or sediment. Soil or Sediment Alteration Within the Ass	sessment Area		Stressor subscore=	0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: MC-W-02

Date: 5 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.181689, -66.187034

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.		•				
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.30	Higher	0.29	Lower	5.81	0.38
Stream Flow Support (SFS)	3.59	Moderate	3.16	Moderate	1.92	1.84
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	5.24	Higher	0.00	Lower	6.62	0.33
Nitrate Removal & Retention (NR)	2.77	Moderate	0.25	Lower	5.54	1.33
Carbon Sequestration (CS)	8.91	Higher			8.41	
Organic Nutrient Export (OE)	5.71	Higher			5.36	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	7.66	Higher	1.06	Moderate	6.57	1.82
Amphibian & Turtle Habitat (AM)	2.96	Lower	3.53	Moderate	4.87	4.23
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	7.27	Higher	6.67	Moderate	6.03	6.67
Pollinator Habitat (POL)	9.80	Higher	6.67	Moderate	7.89	6.67
Native Plant Habitat (PH)	8.26	Higher	7.91	Higher	6.42	6.86
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.00	Lower		2.02
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	3.59	Moderate	0.29	Lower	5.81	0.38
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.38	Higher	0.29	Lower	7.82	0.98
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	5.95	Moderate	2.29	Moderate	5.02	1.53
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.78	Lower	2.12	Lower	2.92	2.54
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.12	Higher	7.50	Higher	7.34	6.80
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			0.11	Lower		2.18
	NOTE: A scor	e of 0 does not	moon the fund	ion or honofit i	a abaant from t	no wotland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PH-W-07
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	6 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.204537
Longitude (decimal degrees):	-66.188376
ls a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	3.34
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-t-asp For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

Too States The St	# Indicators	Condition Choices	Data	Definitions/Explanations
Figure (Instance County	1 Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
Peter South Annual Peter		New Brunswick	- 1	
Provided to William 1. The control of the Control		Nova Scotia	0	spatial data exists in a particular province.
Provide Market 1 No active contact waster greated dengagement of the governance and inches (1) in a separate in the Ask and (2) offers in an inches (1) in the contact provided case. Believe in the Ask and (2) offers in the Ask and (2) offers in the Ask and (2) offers in the Ask and (3) offers in the		Prince Edward Island	0	
In Section 19 (a) The Section 19 (a) Company of the Section 19 (a)		Newfoundland-Labrador	0	
Unit of Newson Services 10 November 1		The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
801 - 8 Indiges 1 1 To Technics 2 0 0 of and in largery (copy) and one of the Special product of the Technics 3 0 of and in largery (copy) and one of the Special product of the Technics 4 0 0 of the Special product of the Technics 5 0 of th		< 0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
1. The Description 1. The Descri			0	
The Note of No			0	
25 Sign betters Percent Water 6 Percen			0	
Somework and any of the search provided during ment of the growing scatters that \$\$\text{\$\tex			- 1	
All Recurs (place) from 1 to 10 to 1			0	
10 - 1.1 hostors 1 hostors				See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include or the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
Size of Language 1 houses		< 0.01 hectare (about 10 m x 10 m).	0	
St. 1 Indicates			0	1
The The Notices Company			0	1
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New Following New Processors New Pro			- 1	
Size of Large Meeting The signate Meeting The size september path of controls that New September The Active September The Active September			0	
100 10 The Colors 10 10 10 The Colors 10 10 Th		The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
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Som, and not separated from the 375-ha vegetated area by any width operated reads, shorthers of grow water, fow crops, being grants, show, or improvious strates, or Shift have greated area by those features, and AA does not contain >375 ha of vegetation. 50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation. 50 500 m, but separated by those features. 50 5.5 http, but separated by Those features. 50 7.5 http, but se				GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
50-500 m, and rost separated. 50-500 m, and separated by those features. 10-50 m, and rost separated. 50-500 m, and separated by those features. 50-50 m, and not separated. 50-50 m, and not separated. 50-50 m, and postaged by those features. 50-50 m, and not separated. 50-50 m, and one separated. 50-50 m, and not separated by those features. 50-50 m, and not separated by those features which in this that page are 510% neared. 50-50 m, and not separated by the selection of			1 s.]	
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Fig. 7. If not, consider: The AA's vegetation cover is > 10% herbaceous* but uplands within 1 km have < 10% herbaceous cover. If so, enter '2' and continue to OFF. If not, consider: The AA's vegetation cover is > 10% herbaceous* but uplands within 100 m of the wetland edge have < 10% herbaceous cover. If so, enter '1' I'NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrubbands. Include moss as well as grassifile plants in this use of herbaceous vegetation? The AA's vegetation cover is > 10% woody but uplands within 5 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation cover is > 10% woody but uplands within 5 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation cover is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation cover is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation cover is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation cover is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation is > 10% woody but uplands within 1 km have < 10% woody cover. If so, enter '3' and continue to OFE. If not, consider: The AA's vegetation to vood the tended of the AA. Circles of		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
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The AA's vegetation is >10% woody' but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider: The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter 1" ["NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: -5% of the land5 to 20% of the land5 to 90% of the land5 to 20%	7 Woody Uniqueness		2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" "NOTE: woody cover = trees & shrubs taller than 1 m.] Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: So 20% of the land.		The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,		rows. [AMv, PHv, POLv, SBMv]
that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is: c5% of the land.		The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
5 to 20% of the land. 20 to 60% of the land. 30 to 60 to 90% of the land. 30 to 60 to 90% of the land. 30 to 90% o				In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
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>90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Nearest Population Center Nearest Population Center Measured along the maintained road nearest the AA, the distance to the nearest population center is: 100 - 500 m. 100 - 500 m. 100 - 5 1 km. 1 - 5 km. Note that Cover is mostly: AM, SBM] AM, SBM] AM, SBM] AM, SBM] Population center means a settled area with more than about 5 regularly-inhabited struct square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the control of the control of the control of the path, and draw and measure the control of the path, and draw and measure the control of the path and draw and measure the control of the path, and draw and measure the control of the path and draw and measure the control of the path and draw and measure the control of the path and draw and measure the control of the path and draw and measure the control of the path and draw and measure the control of the path and draw and measure the control of the path and t				1
Type of Land Cover Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Alteration Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Inpervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearest population center is: **On m.** **On the Path, and draw and measure the souls of the circle in the circle			1	
Alteration Impervious surface, e.g., pawed road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. O Islance by Road to Nearrest Population Center Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: -100 m. -100 m. -100 -500 m. 0 5-1 km. 0 5 Settlements (click on Place Names in menu) or other areas not close to mapped settlement which meet the criteria. [FAy, FRy, NRy, PH, PU, SBM, WBFv] which meet the criteria. [FAy, FRy, NRy, PH, PU, SBM, WBFv]	9 Type of Land Cover			[AM SRM]
Impervious surface, e.g., pared road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landsilde, conifer plantation. 10 Distance by Road to Nearest Population Center Center Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: 100 - 500 m. 100 - 500 m. 100 - 500 m. 100 - 500 m. 101 - 5 km. 100 - 5 km. 100 - 5 km. 100 - 5 km.				ini, soni
10 Oistance by Road to Nearest Population Center			1	
Nearest Population Center <100 m.			0	
Center 100 m. 0 route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the 100 - 500 m. 0 Settlements (click on Place Names in menu) or other areas not close to mapped settlement which meet the criteria_[FAv, FRv, NRv, PH, PU, SBM, WBFv] 1 - 5 km. 1		Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures po
100 - 500 m. 100 - 500 m. 0 Settle Georgia Saw a weason to receive a few and a few a		-100 m	Ω	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
0.5-1 km. 0 which meet the criteria [FAv, FRv, NRv, PH, PU, SBM, WBFv] 1 - 5 km. 1	Center			
1 - 5 km. 1				
			1	man most are differed from 1100, 1000, 111, 110, 3000, WDI VI
		>5 km.	0	

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. (
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	1	
		100 - 500 m.	0	-
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	·	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands as
		separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro
		marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.		using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as we
		R 30 III, and not separated by any widin or paved roads, shelches or open water, row crops, lawn, bare ground, or impervious surface.	U	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m.	0	
		100 m · 1 km. 1 · 2 km.	0	
		2-5 km.	0	1
		5-10 km.	0	1
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		5-10 Km. 10-40 km.	0	-
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the A/	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	1
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood
		surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	modeling. [WSv]
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (boltom right, NOT the "eye alt"). Then move cursor around to determine the watershed's	0.70	[FA, NR, Sens, SFSv, WCv, WSv]
7F10	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
	Watershed or Area	Enter 1= yes, 0= no.	Ů	·
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels hammful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	1
		paripring until your low water periods and times with high runoit (storms, showner) indicates no problems in either the AA of illinowing waters.		
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
)F21	Degraded Water	all wetlands in this region. The problem described above isdownslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
.121	Downstream		_	may ass assumed unite, or mornior waters as part of this wettand assessment. [rinty, PRV, SRV]
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	1
		The condition is present within 5 km downstope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	U	
			0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	Ľ	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream) This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of its	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which	1	Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF22	Wetland as a % of Its Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland fitself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland.	1	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
DF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	1	
DF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	1	
DF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:	1	
DF22	Contributing Area	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its extendent (not just the AA) by the approximate area of its extendent excluding the area of the wetland in the AA) by the approximate area of its extendent of the interval to the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	1 0 0	
OF23	Contributing Area (Catchment)	Malers. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (rot just the AA) by the approximate area of its catchment excluding the area of the wetland rot just the AA) by the approximate area of its catchment excluding the area of the wetland; for just the surrounding the area of the wetland area. The result is: 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 1.1 to 1. > 1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 1 0 0 0 0	
	Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a lopographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding iterain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its extentment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 0.1 to 1. 1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise long). 	0 1 0 0 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
	Contributing Area (Catchment)	waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the Am may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result its: d.0.11, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 1 (vetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking to other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:	0 1 0 0 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	-
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	d d	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the set of the set of the
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 6 Aug	gust 2020 Site I	Identifier: PH-W-07	Investig	gator: De	errick I	Mitc t	he
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador lea) or other acid-lolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 μS/cm (<64 ppm TDS). Trees are absent or nearty so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, burush, bureed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh nclua ' adja descri	ould also include part of a e the open water part ad, cent " is used synonymo, bed features along their a	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutiling, adjoining, bordering, contiguous – and means no upland (mammade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent – a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	#. 95%, 5 # 75-95%, 4 # 50-75%, 3 # 25-05%, 2 # 5-25%, 1 # <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-wood) vegetation, these percentages should not sum to 100%.	E	huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5 1	
		conliferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees. deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	1	
Vote:	If none of ton 4 rows in	deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation. F3 was marked 2 or greater, SKIP to F9 (N fixers).		
4	Dominance of Most	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover. Then choose one:		[PH, POL, SBM, Sens]
	Abundant Shrub Species	those species together comprise > 50% of such cover.	1	
5	Woody Diameter Classes	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	, , , , , , , , , , ,
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
6	Height Class	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA:	0	[AM, INV, NR, PH, SBM, Sens]
Ū	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		pan, me, m., m, son, son
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely	1	
	Lorgo Char- (D)	absent.	U	Spage are dead standing trace that often (not always) lead had and fillers. Include:
	Large Snags (Dead Standing Trees)	The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7		None, or rewer than 87 nectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7				
7		Several (>8/hectare) but above not true.	1	
8	Downed Wood		0	Exclude temporary "burn piles." [AM, INV, POL, SBM]

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NY INTINING ANGLE OF INCIDENTS. [F.A, F.N., INV., INV., O.E., F.N., SEIN, SEINS]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
				SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA.		
		Other conditions.	0	
F12	Cround Irrogularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,	0	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
F12	Ground Irregularity	raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of numan of natural origin. [AW, EC, MV, MR, PH, POL, PR, Solvi, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
F13	Unland Industry	Several (extensive micro-topography). Mithin the AA inclusions of unland are:	0	[AM, NR, SBM]
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[Min, Min, John]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	Ů	[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	
		Fines. Includes Siir, clay, siir, soils inacmake a hobon longer inam 2 cm when moistened, rolled, squeezed, and extended between mumb and forefinger.	U	
		Deep Peat, to 40 cm depth or greater.	1	
		Shallow Peat or organic < 40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	Ü	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
F17	Fort Course	>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	-
F19	Dominance of Most	>95% of the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous	aquatic plants). Then choose one of the following:		
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	1
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.	L	SED DD DU MDE MON
	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of a normal year.	0	[FR, PR, PU, WBF, WBN]
F23				

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	orided (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water.	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4It the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 700% of the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 10 of the ponded water. 10 -9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 ye me one water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1 - 9 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 fibe part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: This percentage of the AA's water edge. 2-55-0% of the water edge. 50-75% of the water edge. 50-75% of the water edge.</td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 m ponded water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1.7% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 2-75% of the water edge. 1-75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 5-50% of the water edge. 7-55% of the water edge. 7-55% of the water edge. 1-25% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 m ponded water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1.7% of the water edge. 1-25% of the water edge. 2-55% of the water edge. 2-75% of the water edge. 1-75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]

FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest paich of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter *1* and continue. If not, enter *0* and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E40	In elekt of televisid	Extensive.	0	DAMAN
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:	Ŷ	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44		drain the wetland artificially, or water is pumped out of the AA.	Ü	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
			_	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):	0	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
FEO	Croundy-t C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE1	Internal Cradition	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charaline clane. It is the about 125
F51	Internal Gradient	The gradient along most of the flow path within the AA is: % or the AA has no surface water outlet (not even seasonally).</p	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		4. Or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		IAM FA FD INV NDv DH DOL DDv CDM Cone CDv CTD M/DMI
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Buner			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 on, interest are expensed terrestation readines such as callos, made subjects, suream contrast, or exercised pins Quintingrapy that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 nor of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

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gator: Derrick Mitchell	Site Identifier: PH-W-07	D	ate: 6 August 2020				
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2		D			
Aberrant Timing of Water Inputs	Trouble Trouble Trouble Trouble	Turiowick. Voloion 2.					
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuteu (smaller or less frequent peaks spread over longer time:				
Stormwater from impervious surfaces that drains directly to the wetlet	and.						
Water subsidies from wastewater effluent, septic system leakage, snow storage areas, or irrigation.							
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.						
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	lates inflow to the wetland.					
A dam, dike, levee, weir, berm, or fill within or downgradient from		tt of the AA (e.g., road fill, wellpads, pipelines).					
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.						
Artificial drains or ditches in or near the wetland.							
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).						
Logging within the wetland.	machineny livestack fire drainens or off read vehicles						
Subsidence or compaction of the wetland's substrate as a result of r Straightening, ditching, dredging, and/or lining of tributary channels.	*						
If any items were checked above, then for each row of the table below		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row	c			
To estimate effects, contrast the current condition with the condition is		to measurable effect on the lifting of water conditions in any part of	The AA, then leave the 03 for the scores in the following for	, s.			
	Severe (3 points)	Medium (2 points)	Mild (1 point)				
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.				
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	Ĺ			
Score the following 2 rows only if the altered inputs began within past			919.41				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.				
	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.				
Flashiness or muting:	•		Sum=				
เลราแกะรร บา เกินแก้ง.							
Accelerated Inputs of Contaminants and/or solution in the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including falling septic systems).	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=				
Accelerated Inputs of Contaminants and/or a lin the last column, place a check mark next to any item – occurring in	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=				
Accelerated Inputs of Contaminants and/or and In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow stora	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities.	, , , , , , , , , , , , , , , , , , , ,	Stressor subscore=				
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Accelerated Inputs of Contaminants and/or and the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	n either the welland or its CA — that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no lor	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- gger present.	Stressor subscore= R] rlay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "O's" for the scores in the				
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Accelerated Inputs of Contaminants and/or solution the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including falling septic systems). Metals & chemical wastes from mining, shooting ranges, snow storal prividefault asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belowing rows. To estimate effects, contrast the current condition with Usual toxicity of most toxic contaminants:	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local rother areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no local severe (3 points) Industrial effluent, mining waste, unmanaged landfill.	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- gger present. Medium (2 points) Cropland, managed landfill, pipeline or transmission rights-of- way.	Stressor subscores R] Play in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "Os" for the scores in the Mild (1 point) Low density residential.				
Accelerated Inputs of Contaminants and/or solution the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including falling septic systems). Metals & chemical wastes from mining, shooting ranges, snow storal prividefault asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or if any items were checked above, then for each row of the table belowing rows. To estimate effects, contrast the current condition with Usual toxicity of most toxic contaminants: Frequency & duration of input:	n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w. assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no long Severe (3 points)	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- nger present. Medium (2 points) Cropland, managed landfill, pipeline or transmission rights-of-	Stressor subscore= R] rlay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "O's" for the scores in the Mild (1 point)				
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]					
Erosion from plowed fields, fill, timber harvest, dirt roads, vegetation clearing, fires.								
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.								
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.							
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.							
Other human-related disturbances within the CA.								
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.					
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.					
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.					
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.					
	, excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0				
soil or sediment.								
soil or sediment. Soil or Sediment Alteration Within the As.	sessment Area		Stressor subscore=					
Soil or Sediment Alteration Within the As:	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa						
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa						
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Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause arc if any items were checked above, then for each row of the table in effects, contrast the current condition with the condition if the che	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a possible plants in the property of the plants in the plants in the plants is a plants. The plants is a plant in the plants is a plant in the plants in the plants in the plants is a plant in the plants	ported from another wetland. For including the soil structure and/or topography, then lead to the soil structure and/or topography.	st 100 years or since wetland was created or restored (whichever the "0"s" for the scores in the following rows. To estimate Mild (1 point)					
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is Is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause Artificial water level or flow manipulations sufficient to cause ero. If any items were checked above, then for each row of the table is effects, contrast the current condition with the condition if the che	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants of the property of the plants of the property of the plants of the property of the plants of t	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).					
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table offects, contrast the current condition with the condition if the checked states of significant soil alteration in wetland: Recentness of significant soil alteration in wetland:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a compacted periods. The plants is graphic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. The plants is a compact point in the plants is some content of the plants is some content in the plants in the plants in the plants is some content in the plants in the pla	ported from another wetland. Not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.00				
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present it is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mot Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause erd If any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods, and the particular periods are plants). In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. It is not to the checked items did recked items never occurred or were no longer present. Severe (3 points) Severe (3 points) Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.					

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PH-W-07

Date: 6 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.204537, -66.188376

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

сотралеа.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.27	Higher	1.68	Lower	5.79	1.75
Stream Flow Support (SFS)	3.13	Moderate	7.65	Higher	1.67	4.46
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	5.94	Higher	0.73	Lower	7.22	0.44
Phosphorus Retention (PR)	5.54	Higher	0.37	Lower	6.83	0.67
Nitrate Removal & Retention (NR)	2.84	Moderate	1.25	Lower	5.58	2.22
Carbon Sequestration (CS)	8.91	Higher			8.41	
Organic Nutrient Export (OE)	5.32	Higher			5.16	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.40	Moderate	0.73	Lower	5.77	1.64
Amphibian & Turtle Habitat (AM)	2.48	Lower	3.07	Moderate	4.61	3.96
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.28	Moderate	6.67	Moderate	5.20	6.67
Pollinator Habitat (POL)	9.57	Higher	6.67	Moderate	7.71	6.67
Native Plant Habitat (PH)	6.76	Higher	7.52	Higher	5.81	6.53
Public Use & Recognition (PU)			2.15	Lower		1.86
Wetland Sensitivity (Sens)			0.95	Lower		2.49
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	3.13	Moderate	1.68	Lower	5.79	1.75
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	5.36	Moderate	1.02	Lower	7.71	1.67
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.43	Moderate	5.22	Higher	4.46	3.25
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.49	Lower	1.84	Lower	2.77	2.37
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.55	Higher	7.24	Higher	6.98	6.64
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			0.58	Lower		2.41
	NOTE A	101			1 11	41 1 14

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PH-W-08
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	6 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.206996
Longitude (decimal degrees):	
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.89
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals:	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year.	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
		New Brunswick	- 1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
)F2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roar >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) with 1 km is:	0 in	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include or the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
			0	
		<0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare.	0	-
		0.1 - 1 hectare.	0	=
		1 to 10 hectares.	0	
		10 to 100 hectares.	1	
		>100 hectares.	0	
4	Size of Largest Nearby	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops,		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
	Vegetated Tract or	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Set
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	1	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	0	
5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		-60 m, and not separated from the 375-ha vegetated area by any width obaved roads, streiches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscap		
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	4
		0.5 - 5 km, but separated by those features.	0	
6	Herbaceous Uniqueness	None of the above (the closest patches or corridors which are that large are >5 km away). The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	0	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewi
	Tobaccas on quantity	OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter 1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	er	aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buff of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can I drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, P POLv, SBMv, WBFv, WBNv]
-7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not	, 2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted i
		consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		Curisuer. The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining at that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confer plantations.		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analys of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		LSV of the lead	_	
		<5% of the land. 5 to 20% of the land.	0	-
		20 to 60% of the land.	0	1
		60 to 90% of the land.	0	1
		>90% of the land. SKIP to OF10.	1	1
9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	2 2 1		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	4
	0.1	Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
10	Distance by Road to Nearest Population	Measured along the maintained road nearest the AA, the distance to the neares population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures pe square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	<100 m.	0	square knometer. In Google Earth, click on the Ruler Icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route.
		100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
		0.5- 1 km.	0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		1 - 5 km. >5 km.	0	

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
	F12 Wildlife Access	25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads
				hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded Water	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
	Truitos	450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	
		2.5 km.	0	
		5-10 km.	0	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	
		5-10 km.	0	
OF16		10-40 km.	0	
	Upland Edge Contact	Select one:	U	[NR, SBM, Sens]
01 10	opiana Eage Contact	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	0	pro, John, John
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
0547	EL 18 6 N	will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non- tidal Waters			In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
	rua maiors	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by Iidal storm surges.	0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling, [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.		
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.65	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	,,,,
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		paripling utiling both low water periods and times with high runon (storms, showner) indicates no problems in either the AA or inhowing waters.	L	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
		channel.		
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream) This is the situation for nearly all wetlands in this region.	1	
OF22	Wetland as a % of Its	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which		Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
	Contributing Area (Catchment)	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		<0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1.	1	
0.5		1 (wetland is larger than its calchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised bog).	0	
OF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking tole other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		<10%. 10 to 25%.	0	
		>25%.	0	1
		P 40 70.	U	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	-
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	d d	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the set of the set of the
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date:	: 6 August 2020	Site Identifier: PH-W-08	Investiç	jator: Dei	rrick N	Mitch	ĺ
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Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

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"	Indicators	Condition Choices	Data	Definitions/Explanations
-1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador lea) or other acid-tolerant plants (e.g., bog cranberry, pilcher plant, sundew, orchids)s. Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at loe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, butrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of e the open water part ad cent " is used synonymo bed features along their	The AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
-2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
-3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
3	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%. coniferous trees (may include tamarack) taller than 3 m.	5	huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees fundy include familiaracky familia fundi 3 m.	1	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	1	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	1	
Note :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	1	[PH, POL, SBM, Sens]
	Species	those species together do not comprise > 50% of such cover.	0	
75	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th
		coniferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.		
		coniferous, 10-19 cm diameter	1	
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1 1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1 1 1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter.	1 1 1 1 1	
-6	Height Class	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1 1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
-6	Height Class Interspersion	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, >40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous >40 cm diameter.	1 1 1 1 1 0	[AM, INV, NR, PH, SBM, Sens]
-6		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
F6		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, -80 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		[AM, INV, NR, PH, SBM, Sens]
F6		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise 3-70% of the vegetated part of the AA. They each. comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0 0	[AM, INV, NR, PH, SBM, Sens]
F6	Interspersion	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 240 cm diameter. broad-leaved deciduous 20-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0	
F6		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They sach comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely	0 0	
F6	Interspersion Large Snags (Dead	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They seach comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Eliher the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than 87 hectare which exceed this diameter. Several (>8/Hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
F6	Interspersion Large Snags (Dead Standing Trees)	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 240 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an at least 2 m tall. [POL, SBM, WBN]
F6	Interspersion Large Snags (Dead	broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 20-40 cm diameter. coniferous, 3-40 cm diameter. broad-leaved deciduous 2-40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They seach comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Eliher the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than 87 hectare which exceed this diameter. Several (>8/Hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		Do not include infixing aigae or increas. [FA, FIX, INV, INVV, OL, FII, 3500, 3615]
		<1% or none.	1	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
				SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		AVA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	-
		AA.	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	1
		Intermediate.	1	
Ear		Several (extensive micro-topography).	0	CAM NID COM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	-
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Soil Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[05] 111, 05, 111, 111, 05, 115, 115,
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	- 1	
		Shallow Peat or organic < 40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		,
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	-
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	1
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or outlined shortly horrors. [1 Obj
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	-
		50-95% of the herbaceous part of the AA.	0	1
		>95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	1
		5-50% of the vegetated area.	0]
		50-95% of the vegetated area.	0	
E10	Deminance -ft4/	>95% of the vegetated area.	0	For this question include force or well as graminoids and facts IEC INIV DU DOL C.
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0]
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	-
		■HOVESIVE SPECIES CONDITISE 3-2020 OF THE DELO COVER FOR WOODY COVER, IF THE HIVASIVES ARE WOODY.	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
F21	Invasive Cover Along			If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
F21	Invasive Cover Along Upland Edge	invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody), invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welfand-upland boundary, the percent of the upland edge (within 3 m upslope from the welfand) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	
F21		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0 1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge.	0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0 1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge Fringe Wetland	invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the vegetated zone within the wetland. Enter '1' if true, '0' if false.	0 1 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR] [WBF, WBN, WCv]
	Upland Edge	invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0 1 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]

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	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar: [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.
	Water	Water is: Near The AA dries up completely (so water in change)s either) or pour has surface water during most years. SVID to E27.	0	[AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA.	0	
		20-50% of the AA.	0	
		50-95% of the AA.	0	
F26	% of Summertime	>95% of the AA. True for many fringe wetlands. At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are	0	[FA, WC]
	Water that Is Shaded	within the AA at that time is:		. ,
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	OC, 111, SIS, WOI, WOI, WO]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	roportions	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	U	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		3-30% of the water.	0	
		70-95% of the water.	0	
		>95% of the water.		
F32	Ponded Open Water -	In	0	
	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or enlirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. 50 100 m. or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
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FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[AW, FA, FK, 11VV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]	0	passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Series in st. applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Audited to these chiefla shirtly - out hot use personal puginent based of her continuors, pr., or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
	cma Gradietti	The gradient along most of the new part within the AA is. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		> 70.70, or all the area within 30 m of the AM edge is offiel Welldhus. 3Nit to F33.		

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Buner			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 on, interest are expensed terrestation realized such as callos, made subjects, sureain contrast, or exceptive pins Qualifornity inputs that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 nor of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

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igator: Derrick Mitchell	Site Identifier: PH-W-08	D	ate: 6 August 2020					
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2		0				
Aberrant Timing of Water Inputs	Wellands West As for New B	Turiowick. Voloion 2.						
•								
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuteu (smaller or less frequent peaks spread over longer time					
Stormwater from impervious surfaces that drains directly to the wetla	and.			Г				
er subsidies from wastewater effluent, septic system leakage, snow storage areas, or irrigation.								
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.							
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	lates inflow to the wetland.						
A dam, dike, levee, weir, berm, or fill within or downgradient from		tt of the AA (e.g., road fill, wellpads, pipelines).		<u> </u>				
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.			<u> </u>				
Artificial drains or ditches in or near the wetland.				₩				
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).			\vdash				
Logging within the wetland.	machinery livestack fire drainers or off read vehicles			₩				
Subsidence or compaction of the wetland's substrate as a result of r Straightening, ditching, dredging, and/or lining of tributary channels.	*			╁				
If any items were checked above, then for each row of the table below		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row	vs				
To estimate effects, contrast the current condition with the condition is		to measurable effect on the liming of water conditions in any part of	The AA, then leave the 03 for the scores in the following for					
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.					
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	Ĺ				
Score the following 2 rows only if the altered inputs began within past			0.00					
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	╄				
	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled. Sum=	_				
Flashiness or muting:	, ,							
เฉราแบรร พ. เกษแบ้ง.				Ļ				
Accelerated Inputs of Contaminants and/or sometime in the last column, place a check mark next to any item – occurring in Stormwater or wastewater effluent (including falling septic systems).	Salts n either the welland or its CA – that is likely to have accelerated to landfills, industrial facilities.		Stressor subscore=					
Accelerated Inputs of Contaminants and/or solution in the last column, place a check mark next to any item — occurring in	Salts n either the welland or its CA – that is likely to have accelerated to landfills, industrial facilities.		Stressor subscore=					
Accelerated Inputs of Contaminants and/or some state of the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow stora	Salts n either the welland or its CA – that is likely to have accelerated to landfills, industrial facilities.		Stressor subscore=					
Accelerated Inputs of Contaminants and/or some land the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including falling septic systems), Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?lang=En&n=B85A1846-1	Salts n either the welland or its CA that is likely to have accelerated to, landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca		Stressor subscore=					
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Accelerated Inputs of Contaminants and/or some last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including falling septic systems), Metals & chemical wastes from mining, shooting ranges, snow storan pri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	Salts n either the welland or its CA that is likely to have accelerated to a large areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w, assign points. However, if you believe the checked items did not the condition if the checked items never occurred or were no longer.	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- gger present.	Stressor subscore- RI rlay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "O's" for the scores in the					
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; $\textbf{low}\text{-}\text{intensity}\text{=}\text{veg}$	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
soil or sediment.			Stressor subscore=	0.00
soil or sediment. Soil or Sediment Alteration Within the Ass	sessment Area		Stressor subscore=	0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour.	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	allered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.			0.00
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Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouleveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause or Artificial water level or flow manipulations sufficient to cause or	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero: If any items were checked above, then for each row of the table b	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero: If any items were checked above, then for each row of the table b	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea	st 100 years or since wetland was created or restored (whichever	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the properties of the result of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause erous and the compact of the sufficient to cause erous the sufficient sufficient to cause erous the sufficient to expensive the sufficient to cause erous the sufficient to cause erous the sufficient to expensive the sufficient	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea	st 100 years or since wetland was created or restored (whichever the "0's" for the scores in the following rows. To estimate Mild (1 point)	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the properties of the result of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause eroil any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked spatial extent of altered soil:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero. If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical extent of altered soil: Recentness of significant soil alteration in wetland:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Titlage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero if any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical states of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.00

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PH-W-08

Date: 6 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.206996, -66.189022

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.68	Higher	1.55	Lower	6.10	1.63
Stream Flow Support (SFS)	3.13	Moderate	7.23	Higher	1.67	4.21
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	5.71	Higher	0.00	Lower	6.95	0.33
Nitrate Removal & Retention (NR)	2.97	Moderate	0.25	Lower	5.66	1.33
Carbon Sequestration (CS)	8.91	Higher			8.41	
Organic Nutrient Export (OE)	5.32	Higher			5.16	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.40	Moderate	0.98	Moderate	5.77	1.78
Amphibian & Turtle Habitat (AM)	3.04	Lower	3.37	Moderate	4.91	4.14
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.93	Moderate	6.67	Moderate	5.75	6.67
Pollinator Habitat (POL)	9.57	Higher	6.67	Moderate	7.71	6.67
Native Plant Habitat (PH)	7.00	Higher	7.73	Higher	5.91	6.71
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			0.50	Lower		2.35
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	3.13	Moderate	1.55	Lower	6.10	1.63
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.49	Higher	0.29	Lower	7.87	0.98
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.43	Moderate	4.98	Moderate	4.46	3.10
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.82	Lower	2.02	Lower	2.94	2.48
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.70	Higher	7.37	Higher	7.08	6.69
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			0.36	Lower		2.35
	NOTE: A coor	o of 0 door not	moon the fund	tion or honofit i	a abaant from t	ho watland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-07
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	7 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.172878
Longitude (decimal degrees):	-66.203534
ls a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.69
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.sno.ca/geonol/ and http://www.sno.ca/geonol/e-appsy-appsy-casps
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

)F1	Indicators	Condition Choices	Data	Definitions/Explanations
	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalise
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which spatial data exists in a particular province.
		Nova Scotia	0	Spanial add Onsis in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roa >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up- menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Meas
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	
3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	n	See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include o the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus albdjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Se
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens
		-50 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.]	1 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	1	For this question only, consider moss to be herbaceous vegetation. Determine the score by view areal imagery in Google Earth After successively drawing or estilianting the boundaries of the but of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMN, F POLV, SBMV, WBFV, WBNV]
7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted
		consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		The ARS vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
	1	<5% of the land.	0	
				4
		5 to 20% of the land.	0	
		5 to 20% of the land. 20 to 60% of the land.	0	-
		5 to 20% of the land. 20 to 60% of the land. 60 to 90% of the land.	0 0	
		20 to 60% of the land.	0	
9	Type of Land Cover	20 to 60% of the land. 60 to 90% of the land.	0	[AM, SBM]
9	Type of Land Cover Alteration	20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:	0 0	[AM, SBM]
9		20 to 60% of the land. 60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 1 0	[AM, SBM]
	Alteration	20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. William the Skm radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0	
	Alteration Distance by Road to	20 to 60% of the land. 60 to 90% of the land. >90% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: impervious surface, e.g., paved road, parking lot, building, exposed rock.	0 0 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p
	Alteration	20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. William the Skm radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0 0 1 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the
	Alteration Distance by Road to Nearest Population	20 to 60% of the land. 60 to 90% of the land. 90% of the land. SKIP to OF10. William the SkiP to OF10. William the SkiP to OF10. William the SkiP to add ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (-S yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:	0 0 1	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
	Alteration Distance by Road to Nearest Population	20 to 60% of the land. 60 to 90% of the land. 500% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ayl) clearout, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m.	0 0 1 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures, square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tools Freehand Line to draw and measure the route
	Alteration Distance by Road to Nearest Population	20 to 60% of the land. 60 to 90% of the land. 50% of the land. SKIP to OF10. Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly: Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearout, dirt or gravel road, cropland, landslide, conifer plantation. Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is: <100 m. 100 - 500 m.	0 0 1 0 0	"Population center" means a settled area with more than about 5 regularly- inhabited structures p square kilometer. In Google Earth, click on the Ruter icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line of draw and measure the rout Settlements (click on Place Names in menu) or other areas not close to mapped settlements but

OF11	Distance to Nearest Maintained Road	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
	ividii italii eu Rodu	<10 m.	0	use the Geord's Diaw Line tool. [AW, FAV, FRV, NRV, FR, FU, SDW, STR, WDN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wellands layer in GeoNB (despite its omissions) to show surrounding wetlands roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roac hidden under forest canopy. (AM, SBM, STR)
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as w [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	1
		0.5 - 1 km, and not separated.	0	1
		0.5 - 1 km, but separated by those features.	- 1	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (tull separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is: 100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	1
		1 -2 km.	0	1
		2-5 km.	1	
		5-10 km.	0	
0545	Tidal Provincit	>10 km.	0	In Coords Forth, moreure the distance to the coord floatistic P. (5, 1) and the
UF I5	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km. 1 - 5 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 KM. 5-10 km.	0	4
		10-40 km.	0	
		>40 km.	0	1
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	1
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	1	
		will be true for most assessments done with WESP-AC.		
OF17	Flood Damage from Non- tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the me under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Dat
	tidai waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	order it by clicking of the arrow to its left and the slider to its right. Ordereck the first (Limits of Data box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case: levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas or no such mapping has been done locally), and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there isno infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.20	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" shou be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NR)
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0]
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
		all wetlands in this region.		
UF21	Degraded Water Downstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
0.55				Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF22	Wetland as a % of its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or it using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its actionment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:) ':	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
OF22	Contributing Area	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or tusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: 4.0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
OF22	Contributing Area	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures describled in the Mahaural. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or calculationed size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.) ':	
OF22	Contributing Area	the AA may be only a part. Then adjust hose boundaries if necessary based on your field observations of the surrounding terrain, and/or lusing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. -0.01 to 0.1. -0.1 to 1. -1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise	0	
	Contributing Area (Catchment)	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusting procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: <0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1 0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot	0 0 1	
	Contributing Area (Catchment)	the AA may be only a part. Then adjust hose boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Mahaural. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. 0.1 to 1. -1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise long).	0 0 1	http://ailas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
	Contributing Area (Catchment)	the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or lusting procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is: -0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1 -1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raise too). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lot other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:	0 0 1	http://ailas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	-
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	1	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the self-self-self-self-self-self-self-self-
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 7 August 2020 Site Identifier: PLE-W-07 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

<i>u</i>	to alt.	Condition of the	D	Definition / C. L. V.
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Welland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swampl alurel, leatherlaef, Lador lea, and others. Most require acidic soil. Although not in the family Ericaceae, sweetgale (<i>Mynica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador lea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 μS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (<i>Carex rariflora</i>). Weltland surface and surrounding landscape are seldom sloping and weltland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and fall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & fall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horselail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
A sh nclud adja	ould also include part of e the open water part ad cent " is used synonymo	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their		
	must match. The featur	res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella*), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss; then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
l <u>ote</u> :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub Species	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
		those species together comprise > 50% of such cover.	1	
5	Woody Diameter Classes	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or > 5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for it minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		(perimeter). The edge should include only the trees whose canopies extend into the AA.	- 1	
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	1	
٤	Height Class	broad-leaved deciduous >40 cm diameter.	0	IAM INV ND DLL CDM Conc.
6	Height Class Interspersion		0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		[AM, INV, NR, PH, SBM, Sens]
6		Izoad-keaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely	0	[AM, INV, NR, PH, SBM, Sens]
6	Interspersion Large Snags (Dead	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that a
6	Interspersion	troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 0 1 0	
7	Interspersion Large Snags (Dead	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation tatler than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that at
7	Interspersion Large Snags (Dead Standing Trees)	troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/thectare) but above not true.	0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation tatler than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar

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S: C1% or none. 1-25% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated cover, in the AA or along its water edge (whichever has more). 0 575% of the vegetated part of the AA 0 525% of the vegetated part of the AA 0 525% of the vegetated part of the AA 0 525% of the vegetated part of the AA 0 50-95% of the	thens. [FA, FR, INV, NRv, OE, PH, SBM, Sens] and rocks. [CS, PH] ms, leaves) resting on the ground surface. Bare ground that is poy should be counted, soulders count as bare ground. Wetlands willy shaded or are dominated by annual plant species tend to have e during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
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Sphagnum Moss Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller sedges and other plants rooted in it, is: 5% of the vegetated part of the AA. 5.25% of the vegetated part of the AA. 5.25% of the vegetated part of the AA. 25.50% of the vegetated part of the AA. 0.0 50.95% of the veg	ms, leaves) resting on the ground surface. Bare ground that is opp should be counted. Boulders count as bare ground. Wetlands willy shaded or are dominated by annual plant species tend to have
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Set of the vegetated part of the AA. Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the predominant condition in those areas at that time is: Little or no (-5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage. Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA. Other conditions. Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time. F12 Ground Irregularity Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or	opy should be counted. Boulders count as bare ground. Wetlands will shaded or are dominated by annual plant species tend to have
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raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or	
	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
Few or none (minimal microtopography: <1% of the land has such features, or entire AA is always water-covered). 0	
Intermediate. Several (extensive micro-topography).	
F13 Upland Inclusions Within the AA, inclusions of upland are: [AM, NR, SBM]	
Few or none.	
Intermediate (1 - 10% of vegetaled part of the AA).	
Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	
F14 Soil Texture In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at [CS, NR, OE, PH, PR, Sens, SFS, VIII]	WS]
least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]	
Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	
Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and 0	
forefinger. Deep Peat, to 40 cm depth or greater.	
Deep Peat, to 40 cm depth or greater. 0 Shallow Peat or organic <40 cm deep. 1	
Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended 0	
between thumb and forefinger.	
F15 Shorebird Feeding Habitals During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]	t not all migratory sandpipers, plovers, and related species. [WBF]
None, or 100 st. m	
100-1000 sq. m. 0	
1000 – 10,000 sq. m. 0	
>10,000 sq. m. 0	
F16 Herbaceous % of Vegetated Wetland Vegetated Wetland	
<5% of the vegetated part of the AA of <0.01 nectate (whichever is less), wark if there and SKIP to F20 (invasive Plant Cover).	
5-25% of the vegetated part of the AA. 0 25-50% of the vegetated part of the AA. 0	
50.95% of the vegetated part of the AA. 0	
>95% of the vegetated part of the AA. 0	
	t include grasses, sedges, cattail, other graminoids, ferns, horsetails,
-5% of the herbaceous part of the AA. 0 or others that lack showy flowers.	[POL]
5-25% of the herbaceous part of the AA.	
25-50% of the herbaceous part of the AA. 0.0	
50-95% of the herbaceous part of the AA. 90 >95% of the herbaceous part of the AA.	
F18 Sedge Cover Sedges (Care sp.) and orthograss (Eriopharum spp.) occupy: [CS]	
<5% of the vegetated area, or none.	
5-5% of the vegetated area. 0 nutrie: 0 0	
50-95% of the vegetated area.	
>95% of the vegetated area. 0	
	well as graminoids and forbs. [EC, INV, PH, POL, Sens]
Abundant Herbaceous aquatic plants). Then choose one of the following: Species (hose species together comprise > 50% of the areal cover of herbaceous plants at any time during the year. 0	
those species upgened comprise > 50x or the areal cover of herbaceous plants at any time during the year. 1 1	
F20 Invasive Plant Cover How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo [EC, PH, POL, Sens]	
file.	
invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals). Liverals a species are present in specia that reasonable that comparish a special project of the observation are present for the present of	
invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	
invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). 0	
Invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	
Invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). 0	The first of the second
	pecies (e.g., winter conditions) but its genus contains an exotic plant to also be exotic. If vegetation is so senesced that exotic
Opinitu Luge - process cannot be identified, around none of the upland edge (nvasives apparently absent), or AA has no upland edge.	
some (but <5%) of the upland edge.	
5-50% of the upland edge.	
most (>50%) of the upland edge.	
F22 Fringe Wetland During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the 0 [WBF, WBN, WCv]	
vegetated zone within the welland. Enter 1" if true, "0" if false.	

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	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar: [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.
	Water	Water is: Near The AA dries up completely (so water in change); either) or pour has surface water during most years. SVID to E27.	0	[AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA.	0	
		20-50% of the AA.	0	
		50-95% of the AA.	0	
F26	% of Summertime	>95% of the AA. True for many fringe wetlands. At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are	0	[FA, WC]
	Water that Is Shaded	within the AA at that time is:		. ,
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	OC, 111, SIS, WOI, WOI, WO]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	roportions	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	U	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		3-30% of the water.	0	
		70-95% of the water.	0	
		>95% of the water.		
F32	Ponded Open Water -	In	0	
	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or enlirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water. 120% of the ponded water.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4It the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4. The time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4. The time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. 50 100 m. or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1 - 9 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 fibe part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: This percentage of the AA's water edge. 2-55-0% of the water edge. 50-75% of the water edge. 50-75% of the water edge.</td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 10 -9 m. 10 -29 m. 30 -49 m. 50 -100 m. 10 or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less) than about 5% measured within 5 m landward of the water) is: <1 m. 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 3.75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.% of the water edge. 2.55% of the water edge. 5.57% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 5-50% of the water edge. 5-50% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 1-55% of the water edge. 1-55% of the water edge. 1-55% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]

FieldF form - Non-tidal Page 3 of 5

:37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilch, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these of this with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).	0	
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>U</td><td></td></once>	U	
-43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
-44	T-lb. dans Ob annual	drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger	Ŭ	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water conlinues to travel in unvegetated (often incised) channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairty indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
-47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *1". Neither of above. Enter *1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µSkcm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
-49	Danier Dankahilik	Neither of above	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
77	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE): Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	[r.v, r.v, som, sells, wor, word]
		Likely based on known occurrence in the region and proximity to sultable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	U	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	OF EVIDENCE	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
		primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.		along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
F51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA,	0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, it known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally).	0	
⁷ 51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than - 1 km), this may be estimated using Google Earth to determine the minimum and
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 22% or the AA has no surface water outlet (not even seasonally). 2-5%. 6-10%.	0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
Note fo	or the next three quest	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6.10%. 10%. 10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR.
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 22% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. 3-10%. The first AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are sees questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial	0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR.
Note fo adjacer	or the next three quest tt. In many situations, th	Most of the AA has a slope of 55%, or is very close to the base of a natural slope longer than 100 and much sleeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 25%. 6-10%. >10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: -2% or the AA has no surface water outlet (not even seasonally). 25%. 6-10%. -10%. -10%. Within a Zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: -5%. 5 to 30%.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of 55%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2-5%. 10%.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 to m, there are executed televation realizes such as callos, and a suppes, surean varies, or exercise pins (our interpretable extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

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	Site Identifier: PLE-W-07	D	ate: 7 August 2020
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2	
Aberrant Timing of Water Inputs	Wetterland: Web: Ad for New B	Turiowick. Voloion 2.	
In the last column, place a check mark next to any item that is likely more temporal homogeneity of flow or water levels) or more flashy (i			nuted (smaller or less frequent peaks spread over longer time:
Stormwater from impervious surfaces that drains directly to the wet	land.		
Water subsidies from wastewater effluent, septic system leakage, s	now storage areas, or irrigation.		
Regular removal of surface or groundwater for irrigation or other co	nsumptive use.		
Flow regulation in tributaries or water level regulation in adjoining w	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.	
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	It of the AA (e.g., road fill, wellpads, pipelines).	
Excavation within the wetland, e.g., dugout, artificial pond, dead-en	d ditch.		
Artificial drains or ditches in or near the wetland.			
Accelerated downcutting or channelization of an adjacent or interna	I channel (incised below the historical water table level).		
Logging within the wetland.			
Subsidence or compaction of the wetland's substrate as a result of	· · · · · · · · · · · · · · · · · · ·		
Straightening, ditching, dredging, and/or lining of tributary channels			
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		io measurable effect on the timing of water conditions in any part of	une AA, unen leave the "US" for the scores in the following rov
	Severe (3 points)	Medium (2 points)	Mild (1 point)
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.
Score the following 2 rows only if the altered inputs began within pas	t 10 years, and only for the part of the wetland that experiences the	nose.	-
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.
Electrica de la continu	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.
Flashiness or muting:			Sum=
Flashiness or muting:			
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring. Stormwater or wastewater effluent (including failing septic systems)	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.		Stressor subscore=
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring.	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.		Stressor subscore=
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring of Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stor	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities.		Stressor subscore=
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring. Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stornpri/default.asp?lang-En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	in either the wetland or its CA that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA.	tions from National Pollutant Release Inventory and view KMZ over	Stressor subscore= R/ lay in Google Earth. https://www.ec.gc.ca/inrp-
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring of Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stornpri/default.asp?lang=En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, of If any items were checked above, then for each row of the table belice.	in either the wetland or its CA – that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca or other areas in the CA. w, assign points. However, if you believe the checked items did no was a sign points. However, if you believe the checked items did no was a sign points. However, if you believe the checked items did no was a sign points.	tions from National Pollutant Release Inventory and view KMZ over	Stressor subscore= R/ lay in Google Earth. https://www.ec.gc.ca/inrp-
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item occurring. Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stornpri/default.asp?lang-En&n=B85A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or	in either the wetland or its CA – that is likely to have accelerated to , landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many loca r other areas in the CA. w, assign points. However, if you believe the checked items did no the condition if the checked items never occurred or were no lond the condition if the checked items never occurred or were no lond.	tions from National Pollutant Release Inventory and view KMZ over of cumulatively expose the AA to significantly higher levels of conta- gger present.	Stressor subscore- R] lay in Google Earth. https://www.ec.gc.ca/inrp- minants and/or salts, then leave the "Os" for the scores in the
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FieldS form Non-tidal 1

	buting Area				
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]		
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.				
Erosion from construction, in-channel machinery in the CA.					
Erosion from off-road vehicles in the CA.					
Erosion from livestock or foot traffic in the CA.					
Stormwater or wastewater effluent.					
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.				
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.				
Other human-related disturbances within the CA.					
	elow, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,		
	Severe (3 points)	Medium (2 points)	Mild (1 point)		
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.		
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.		
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.		
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.		
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; $\textbf{low}\text{-}\text{intensity}\text{=}\text{veg}$	removal only with little or no apparent erosion or disturbance of	Sum=	0	
soil or sediment.					
soil or sediment.			Stressor subscore=	0.00	
soil or sediment. Soil or Sediment Alteration Within the Ass	sessment Area		Stressor subscore=	0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou	the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour.	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	allered the wetland's soil. Consider only items occurring within pa		0.00	
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Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation.	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil im	, ,		0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland.	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil imshore erosion or stir bottom sediments.	, ,		0.00	
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouleveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause or Artificial water level or flow manipulations sufficient to cause or	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00	
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero: If any items were checked above, then for each row of the table b	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00	
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Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mould be compacted from the problem of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause eroil from the problem of the table beflects, contrast the current condition with the condition if the characteristics. Spatial extent of altered soil: Recentness of significant soil alteration in wetland:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0.00	
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Titlage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero if any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical states of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.00	

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-07

Date: 7 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.172878, -66.203534

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.99	Moderate	0.42	Lower	4.04	0.50
Stream Flow Support (SFS)	2.81	Lower	3.33	Moderate	1.50	1.94
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	2.69	Moderate	0.53	Lower	5.00	0.32
Phosphorus Retention (PR)	3.68	Moderate	0.17	Lower	5.51	0.49
Nitrate Removal & Retention (NR)	0.91	Lower	1.56	Lower	4.39	2.50
Carbon Sequestration (CS)	8.05	Higher			8.03	
Organic Nutrient Export (OE)	5.97	Higher			5.50	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.08	Moderate	0.62	Lower	5.66	1.58
Amphibian & Turtle Habitat (AM)	2.45	Lower	2.90	Moderate	4.60	3.85
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	5.89	Moderate	6.67	Moderate	4.89	6.67
Pollinator Habitat (POL)	7.92	Higher	6.67	Moderate	6.38	6.67
Native Plant Habitat (PH)	7.09	Higher	6.89	Higher	5.95	5.98
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			1.55	Lower		2.67
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			1.64	Lower		2.86
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.81	Moderate	0.42	Lower	4.04	0.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.05	Lower	1.16	Lower	6.88	1.80
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.72	Moderate	2.33	Moderate	4.41	1.56
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.47	Lower	1.74	Lower	2.76	2.31
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.44	Moderate	6.81	Higher	6.06	6.55
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			1.60	Lower		2.77
	NOTE: A coor	o of 0 door not	moon the fund	tion or honofit i	a abaant from t	ho watland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-08
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	7 August 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.174913
Longitude (decimal degrees):	-66.20149
ls a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	3.19
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the Q (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html
GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geomb. http://www.sinu.ca/geomb./ and http://www.sinu.ca/geomb./ geomb./ geomb Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

km. F3 Ponde Wetlar	ed Area Within 1 ed Waler & and Within 1 km. of Largest Nearby tated Tract or	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one. New Brunswick Nova Scotla Prince Edward Island Newfoundland-Labrador The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1.1 to 10 hectares. 10 to 10 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1.1 to 10 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1.1 to 10 hectares.	1 0 0 0 0 0 0 0 1 0	This determines to which province's calibration wetlands the raw score of any wetland is normalised in the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province. "Adjacent" means not separated from the AA by a wide expanse (-50 m) of upland (including road "SO m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the an from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up memu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measur tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries shown in online wetlands layers. [PH, SBM, WBN]
km. F3 Ponde Wetlar F4 Size o Veget	ed Water & and Within 1 km. of Largest Nearby tated Tract or	Nova Scotia Prince Edward Island Newfoundland-Labrador The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). -0.01 - 0.1 hectare. 1 to 10 hectares. 10 to 100 hectares. 10 to 100 hectares. 10 to 100 hectares. 10 to 100 hectares. 10 to 10hectare. -0.01 hectare (about 10 m x 10 m).	0 0 0 0 0 1 0	spatial data exists in a particular province. "Adjacent" means not separated from the AA by a wide expanse (-50 m) of upland (including road -50 m wide). Include ponded areas likely to be hidden by wetland segelation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include lidal areas. Measure the ar from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pocupe menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
km. 73 Ponde Wetlar 74 Size o	ed Water & and Within 1 km. of Largest Nearby tated Tract or	Prince Edward Island Newfoundland-Labrador The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: «0.01 hectare (about 10 m x 10 m). 0.01 · 0.1 hectare. 1.10 10 hectares. 1.10 10 hectares. 1.10 10 hectares. 1.10 10 hectares. 1.10 thectares. 1.10 hectares.	0 0 0 0 0 1 0	"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including road >50 m wide). Include ponded areas likely to be hidden by welland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include idial areas. Measure the an from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in poo-up menu). With the GeoNB viewer, enable the Weltands layer, then measure with the Draw & Measur tool after specifying Aerial as the Basemap. However, do not rely entirely on weltand boundaries
km. Ponde Wetlar Size o Vegeta	ed Water & and Within 1 km. of Largest Nearby tated Tract or	Newfoundland-Labrador The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). -0.1 - 0.1 hectare. -0.1 - 1 hectare. -0.1 - 1 hectares. -0.0 hectares.	0 0 0 0 1 0 0	>50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the art from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measur tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
km. Ponde Wetlar Size o Vegeta	ed Water & and Within 1 km. of Largest Nearby tated Tract or	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1.0 1 hectare. 1.0 to 10 hectares. 10 to 100 hectares. 10 to 100 hectares. 110 to 100 hectares.	0 0 0 1 0 0 0	>50 m wide). Include ponded areas likely to be hidden by welland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include lidal areas. Measure the a firom aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wellands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on welland boundaries
km. Ponde Wetlar Size o Vegeta	ed Water & and Within 1 km. of Largest Nearby tated Tract or	 0.001 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1 to 10 hectares. 10 to 100 hectares. 10 he area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: 0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1 to 10 hectares. 	0 0 1 0 0	>50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a firm a cerial limagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up-menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
Wetlar 4 Size o	and Within 1 km. of Largest Nearby tated Tract or	0.01 - 0.1 hectare. 0.1 - 1 hectare. 1.0 to 10hectares. 1.0 to 100 hectares. 1.0 to 10hectares. 1.0 to 10hectares. 1.0 to 10hectares. 1.0 hectares.	0 0 1 0 0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
Wetlar 4 Size o	and Within 1 km. of Largest Nearby tated Tract or	0.1 - 1 hectare. 1 to 10 hectares. 10 to 100 hectares. 100 hectares. 1000 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1 to 10 hectare.	0 1 0 0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
Wetlar Size or Vegeta	and Within 1 km. of Largest Nearby tated Tract or	1 to 10 hectares. 10 to 100 hectares. >100 hectares. >100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: •0.01 hectare (about 10 m x 10 m). 0.01 • 0.1 hectare. 1 to 10 hectares.	0 0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
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Wetlar 4 Size o	and Within 1 km. of Largest Nearby tated Tract or	>100 hectares. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: <0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 0.1 - 1 hectare. 1 to 10 hectares.	0	
Wetlar 4 Size o	and Within 1 km. of Largest Nearby tated Tract or	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is: -0.01 hectare (about 10 m x 10 m). -0.01 - 0.1 hectare. -0.1 - 1 hectare. -0.1 - 1 hectare. -0.1 - 1 hectare.	0	
Wetlar 4 Size o	and Within 1 km. of Largest Nearby tated Tract or	1 km is: -0.01 hectare (about 10 m x 10 m). 0.01 - 0.1 hectare. 1 to 10 hectares.	0	
Vegeta	tated Tract or	0.01 - 0.1 hectare. 0.1 - 1 hectare. 1 to 10 hectares.		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include on the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
Vegeta	tated Tract or	0.1 - 1 hectare. 1 to 10 hectares.	0]
Vegeta	tated Tract or	1 to 10 hectares.		
Vegeta	tated Tract or		0	
Vegeta	tated Tract or		1	
Vegeta	tated Tract or		0	4
Vegeta	tated Tract or	>100 hectares.	0	
Coma		The largest vegetated patch or corridor that includes the AA's vegetation plus all adjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Ser
	uui	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
Distan		>1000 hectares. [<i>This is nearly always the answer in relatively undeveloped landscapes.</i>] The minimum distance from the edge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer		To account distance on County County Day (Dulan Line tool) Occurs Down 8 Manager tool at
	nce to Large tated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		-50 m, and not separated from the 375-ha vegetated area by any width of pawed roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains > 375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	1
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	<u>]</u>
		0.5 - 5 km, and not separated.	0]
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
6 Herbai	·	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter 1". [**NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. include moss as well as grasslike plants in this use of 'herbaceous vegetation']		For this question only, consider moss to be herbaceous vegetation. Determine the score by viewin arerial imagery in Google Earth after successively drawing or estimating the boundaries of the buff of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can b drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMW, P. POLV, SBMV, WBFV, WBNV]
7 Woody	dy Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		Consider: The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter *2" and continue to OF8. If not, consider:		IONS. [ANNY, FITY, FOLY, JUNY]
		The AA's vegetation is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
	Vegetated Cover entage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining area that is wooded or unmanaged herbaceous vegelation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or confler plantations) is:	1	In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analy of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	1
		5 to 20% of the land.	0	1
		20 to 60% of the land.	0	1
		60 to 90% of the land.	0	1
		>90% of the land. SKIP to OF10.	1	
	of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	1	
9 Type o		Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	4
		Dear pervious surface, e.g., favin, recent (<5 yrs ago) clearcut, unit or graver road, cropiano, fanosinde, contien plantation. Measured along the maintained road nearest the AA, the distance to the nearest population center is:	U	"Population center" means a settled area with more than about 5 regularly- inhabited structures pe
Alterat	ation			
Alterat		1.1		square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
Alterat	nce by Road to est Population	<100 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
Alterat 10 Distan Neare	nce by Road to est Population	<100 m. 100 - 500 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route! Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
Alterat 10 Distan Neare	nce by Road to est Population	<100 m.		route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. O
OFII	Maintained Road		0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		<10 m. 10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m.	1	
0540	1801 100	>500 m.	0	LAND THE WAR THE CONDITION OF THE CONDIT
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibilans can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change to blank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. (AM, SBM, STR)
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features. 0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	- 1	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate) non-tidal body of water that is ponded during most of the year and is larger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m. 100 m - 1 km.	0	
		1 - 2 km.	0	
		2-5 km.	0	
		5-10 km.	- 1	
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km.	0	
		5-10 km. 10-40 km.	0	
		10-40 km.	0	
OF16	Upland Edge Contact	Select one:	Ü	[NR, SBM, Sens]
	3	The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water.	0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wellands or water that is mostly wider than the AA. This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the men
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling, (WSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	mounting, (1004)
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure uulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable	0	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the ANS approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's		[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AAS elevation by the (max-min). In Google Earth, open the KMZ file NB. Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.20	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Water duality Sensitive Watershed or Area Degraded Water	Enter 1 – yes, 0 – no. Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic	Ü	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:		be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flow into the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water Downstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly	0	
		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which he AI may be only a part. Then adjust those boundaries if necessary based on your field observations of the surroundinghan, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result its:		Topographic maps may be viewed online at the National Allas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1.	1	
		>1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised bog).	0	
OF23	Unvegetated Surface in the Contributing Area	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots, other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
		<10%	1	1
		>25%.	0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	АЗРССС	The overlaid now direction of most surface water (in streams, twens), or fation, that enters the AV is.		[1111, 1111, 51 5, 110, 115]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW), south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF24	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlets
UF26	(Path Length)	The nonzonian now distance from the wedand's linet to outer is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(Falli Leligili)	<10 m.	0	and which are outlets) and augment by held inspection. [NK, OE, PK, SK, WS]
		10 - 50 m.	0	
		10 - 30 III. 50 - 100 m.		
			0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
J. 27	a. Jimig Dogree Days	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
0.5	F1 L A			
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:	ľ	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/StockedW
		Appendix A of the manual. Contact local lisnery biologists, review the ACCDC report, and visit these websites: http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		aters.html
			ļ	[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		is probably is not accessed by any anadromous fish species but is known or likely to have other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented [mark all applicable]:		Request information from ACCDC and/or conduct your own survey at an appropriate season using an
01 27	Concern	The man are pass to journs, in the past for in its adjoining waters or weathrup, qualified observers have documented principal diff applicable.		approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
	CONCENT			approved protocol. For birds, also check eightlorg. [AMV, EC, PHV, POLV, SBMV, Sens, WBFV, WBNV]
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying SuppInfo file, or the AA is within a	0	WDINI
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare worksheet	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called IBAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
01 31	Did CK Duck Nosting Area	predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),	ı °	This was provided by Dr. David Ecske. [WDIVV]
		predicted density (pairs per 25 sq. km) of nesting American black block in the AAA's vicinity. < 10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change to blank .		
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF22	Other Concession	With Cookin plink on Condidate DNA Man Vigues to identify Descripcion. Considerat Welland For the control of the Control	_	(DLI)
OF33	Other Conservation Designation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	0	[PU]
	Designation	invalural Area but also include it the AA is all or part of an area designated by government, First Mations, or the Mature Conservancy of Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC and		
		canada (NCC) for its exceptional ecological readires of highly infact natural conditions. Enter, yes= 1, no= 0. If uncertain, consult NCC and agencies for more recent information.		
				Ten d
OF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank (not		
		0).	<u> </u>	
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OE36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
01.30	Sustained Scientific USE	the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	ı "	[i o]
		ine public. Of the AA is part of an area that has been designated by an agency of institution as a benchmark, reference, of status-trends monitoring area. Ask the property owner. Enter: yes=1, no=0. If no information, change to blank.		
			<u></u>	
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank.		
0555	0 11			
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltered	1	
		conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	1
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		отпольту в устало вы равно восозо в внотов, вногов в эпологали сопротивной сарсиней (whether renewable of 100) is in place.	Ü	
			<u> </u>	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 7 August 2020 Site Identifier: PLE-W-08 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

,,	to die	Condition of t	D	Definition In 1
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Weltland surface and surrounding landscape are seldom sloping and weltland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
A sh nclud adja	ould also include part of a e the open water part adj cent " is used synonymou	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should iacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their		
	must match. The featur	es do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m b 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella) huckleberry, cranberry, cloudberry, sweetglale, alder, willow, birch, ash, dogwood, and a few of you assigned a code of 3 or higher to any of the first four choices and the ground cover beneal trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Se
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	5	accessinates to recommendation of the first term
		conferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	mass species together do not comprise > 3 or 3	U	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for
	Ciasses	conferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland specie
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter. broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	0	
,	Height Class	Follow the key below and mark the ONE row that best describes MOST of the AA:	,	[AM, INV, NR, PH, SBM, Sens]
b	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
b				
b		A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps.	0	
6		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	
6		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely		
7	Large Snags (Dead Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0	
7	Large Snags (Dead Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	Snags are dead slanding trees that often (not always) lack bark and foliage. Include only ones that a at least 2 m tall. [POL, SBM, WBN]
7		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely—absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	
7		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter.	0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN] Exclude temporary "burn piles." [AM, INV, POL, SBM]
7	Standing Trees)	A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km. Several (>8/hectare) but above not true.	0 1 0	at least 2 m tall. [POL, SBM, WBN]

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FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDURE INTIMITY algae of incidens. [1 A, 1 TK, 1944, 1944, O.E., FTI, 3019, 36115]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	-
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	1
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA.	0	-
		25-50% of the vegetaled part of the AA. 50-95% of the vegetaled part of the AA.	0	1
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate. Several (extensive micro-topography).	0	
F13	Upland Inclusions	Within the AA, inclusions of upland are:	U	[AM, NR, SBM]
	, and and and	Few or none.	0	· ·
		Few or none. Intermediate (1 - 10% of vegetated part of the AA).	11	1
		Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at		[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and	0	1
		forefinger.	_	
		Deep Peat, to 40 cm depth or greater. Shallow Peat or organic <40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m.	0	1
		>10,000 sq. m.	0	
F16	Herbaceous % of Vegetated Wetland	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	1
		>95% of the vegetated part of the AA.	0	1
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails,
		<5% of the herbaceous part of the AA.	0	or others that lack showy flowers. [POL]
		5-25% of the herbaceous part of the AA.	1	
		25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	-
F18	Sedge Cover	>95% of the herbaceous part of the AA. Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:	0	[CS]
	go		1	
		<5% of the vegetated area, or none. 5-50% of the vegetated area.	0	1
		50-95% of the vegetated area.	0	1
		>95% of the vegetated area.	0	
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous Species	aquatic plants). Then choose one of the following: those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
	opoulos	those species together comprise > 50% of the areal cover of neroaceous plants at any time during the year. Those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
F20	Invacino Blant Corre	How extensive is the cover of invasive plant species in the AA? For species, see Plants invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
1 20	Invasive Plant Cover	file.		[E-0] : 11,1 OE, 30113]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0]
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:	- 1	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	0	
		5-50% of the upland edge.	0	1
		most (>50%) of the upland edge.	0	
			- 0	[WBF, WBN, WCv]
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F22	Fringe Wetland Lacustrine Wetland		0	[FR, PR, PU, WBF, WBN]

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	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar: [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.
	Water	Water is: Near The AA dries up completely (so water in change); either) or pour has surface water during most years. SVID to E27.	0	[AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA.	0	
		20-50% of the AA.	0	
		50-95% of the AA.	0	
F26	% of Summertime	>95% of the AA. True for many fringe wetlands. At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are	0	[FA, WC]
	Water that Is Shaded	within the AA at that time is:		. ,
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	OC, 111, SIS, WOI, WOI, WO]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	roportions	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	U	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		3-30% of the water.	0	
		70-95% of the water.	0	
		>95% of the water.		
F32	Ponded Open Water -	In	0	
	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or enlirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
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	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. 50 100 m. or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1 - 9 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 fibe part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: This percentage of the AA's water edge. 2-55-0% of the water edge. 50-75% of the water edge. 50-75% of the water edge.</td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 100% of the ponded water. 10 -9 m. 10 -29 m. 30 -49 m. 50 -100 m. 10 or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less) than about 5% measured within 5 m landward of the water) is: <1 m. 1.25% of the water edge. 2.550% of the water edge. 2.550% of the water edge. 3.75% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 1.% of the water edge. 2.55% of the water edge. 5.57% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 5-50% of the water edge. 5-50% of the water edge. 1-25% of the water edge. 1-25% of the water edge. 1-55% of the water edge. 1-55% of the water edge. 1-55% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]

FieldF form - Non-tidal Page 3 of 5

:37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
	Area Non-vegetated Aquatic	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection). During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none. Intermediate.	0	[AM, FA, FR, INV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	Al some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilch, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these of this with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).	0	
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>U</td><td></td></once>	U	
-43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
-44	T-lb. dans Ob annual	drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger	Ŭ	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water conlinues to travel in unvegetated (often incised) channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairty indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
-47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *1". Neither of above. Enter *1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µSkcm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
-49	Danier Dankahilik	Neither of above	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
77	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE): Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	[r.v, r.v, som, sells, wor, word]
		Likely based on known occurrence in the region and proximity to sultable habitat, which may include: (a) a persistent freshwater wetland,	0	
		pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	U	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	OF EVIDENCE	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
		primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.		along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
F51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA,	0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, it known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally).	0	
⁷ 51	Internal Gradient	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than - 1 km), this may be estimated using Google Earth to determine the minimum and
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 22% or the AA has no surface water outlet (not even seasonally). 2-5%. 6-10%.	0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
Note fo	or the next three quest	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6.10%. 10%. 10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR.
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 22% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%. 3-10%. The first AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are sees questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial	0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR.
Note fo adjacer	or the next three quest tt. In many situations, th	Most of the AA has a slope of 55%, or is very close to the base of a natural slope longer than 100 and much sleeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 25%. 6-10%. >10%. ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are nese questions are best answered by measuring from aerial images.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: -2% or the AA has no surface water outlet (not even seasonally). 25%. 6-10%. -10%. -10%. Within a Zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is: -5%. 5 to 30%.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo adjacer	or the next three quest nt. In many situations, th Vegetated Buffer as %	Most of the AA has a slope of 55%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: <2% or the AA has no surface water outlet (not even seasonally). 2-5%. 10%.	0 0 0 0	This is not the same as the shoreline slope. It is the elevational difference between the AAs inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than — 1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 on, interest are expensed terrestation realized such as callos, made suppes, suream datas, or excervated pais Qualiform propy that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOE)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

FieldF form - Non-tidal Page 5 of 5

igator: Derrick Mitchell	Site Identifier: PLE-W-08	D	ate: 7 August 2020	
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2		D
Aberrant Timing of Water Inputs	Trouble Trouble Trouble Trouble	Turiowick. Voloion 2.		
•				
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			muted (smaller or less frequent peaks spread over longer time	5
Stormwater from impervious surfaces that drains directly to the wetla	and.			
Water subsidies from wastewater effluent, septic system leakage, sr	now storage areas, or irrigation.			
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.			
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	lates inflow to the wetland.		
A dam, dike, levee, weir, berm, or fill within or downgradient from		tt of the AA (e.g., road fill, wellpads, pipelines).		
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.			
Artificial drains or ditches in or near the wetland.				
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).			
Logging within the wetland. Subsidence or compaction of the wetland's substrate as a result of r	machineny livestack fire drainage or off read vehicles			
Straightening, ditching, dredging, and/or lining of tributary channels.	*			
If any items were checked above, then for each row of the table below		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "N's" for the scores in the following ro	vs.
To estimate effects, contrast the current condition with the condition is		or water contains an any part of		
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.	
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.	Ĺ
Score the following 2 rows only if the altered inputs began within past			210.61	
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.	-
	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.	
Flashiness or muting:	, ,			
เฉราแกะรร บา เกินแก้ง.	, ,		Sum:	
Accelerated Inputs of Contaminants and/or solution in the last column, place a check mark next to any item - occurring in Stormwater or wastewater effluent (including falling septic systems).	Salts n either the welland or its CA – that is likely to have accelerated the landfills, industrial facilities.		Stressor subscore-	
Accelerated Inputs of Contaminants and/or solution in the last column, place a check mark next to any item — occurring in	Salts n either the welland or its CA – that is likely to have accelerated the landfills, industrial facilities.		Stressor subscore-	
Accelerated Inputs of Contaminants and/or some state of the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems). Metals & chemical wastes from mining, shooting ranges, snow stora	Salts n either the welland or its CA – that is likely to have accelerated the landfills, industrial facilities.		Stressor subscore-	
Accelerated Inputs of Contaminants and/or some state of the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including falling septic systems), Metals & chemical wastes from mining, shooting ranges, snow storan pri/default.asp?lang=En&n=B85A1846-1	Salts n either the wetland or its CA that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local		Stressor subscore-	
Accelerated Inputs of Contaminants and/or State last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storanpri/default.asp?lang=En&n=885A1846-1 Road salt. Spraying of pesticides, as applied to lawns, croplands, roadsides, or If any items were checked above, then for each row of the table below	Salts n either the welland or its CA - that is likely to have accelerated the landfills, industrial facilities. age areas, oil/ gas extraction, other sources (download many local or other areas in the CA. w, assign points. However, if you believe the checked items did no	tions from National Pollutant Release Inventory and view KMZ over	Stressor subscores [R] rlay in Google Earth. https://www.ec.gc.ca/inrp-	
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FieldS form Non-tidal 1

	buting Area			
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.			
Erosion from construction, in-channel machinery in the CA.				
Erosion from off-road vehicles in the CA.				
Erosion from livestock or foot traffic in the CA.				
Stormwater or wastewater effluent.				
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.			
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.			
Other human-related disturbances within the CA.				
	elow, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,	
	Severe (3 points)	Medium (2 points)	Mild (1 point)	
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.	
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.	
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.	
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.	
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; $\textbf{low}\text{-}\text{intensity}\text{=}\text{veg}$	removal only with little or no apparent erosion or disturbance of	Sum=	0
soil or sediment.				
soil or sediment.			Stressor subscore=	0.00
soil or sediment. Soil or Sediment Alteration Within the Ass	sessment Area		Stressor subscore=	0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou	the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour.	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	allered the wetland's soil. Consider only items occurring within pa		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	, ,		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	, ,		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	, ,		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	, ,		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation.	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil im	, ,		0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland.	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. e plants). organic amendments (compost, etc.) or small amounts of topsoil imshore erosion or stir bottom sediments.	, ,		0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mouleveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause or Artificial water level or flow manipulations sufficient to cause or	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero: If any items were checked above, then for each row of the table b	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland.	st 100 years or since wetland was created or restored (whichever	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero: If any items were checked above, then for each row of the table b	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea	st 100 years or since wetland was created or restored (whichever	0.00
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Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Titlage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause eroil any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checks spatial extent of altered soil:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.00
Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mould be compacted from the problem of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause eroil from the problem of the table beflects, contrast the current condition with the condition if the characteristics. Spatial extent of altered soil: Recentness of significant soil alteration in wetland:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0.00
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Titlage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero if any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical states of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.00

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-08

Date: 7 August 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.174913, -66.20149

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	2.99	Moderate	0.42	Lower	4.04	0.50
Stream Flow Support (SFS)	2.81	Lower	3.33	Moderate	1.50	1.94
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	2.69	Moderate	0.53	Lower	5.00	0.32
Phosphorus Retention (PR)	3.68	Moderate	0.17	Lower	5.51	0.49
Nitrate Removal & Retention (NR)	0.91	Lower	1.56	Lower	4.39	2.50
Carbon Sequestration (CS)	8.05	Higher			8.03	
Organic Nutrient Export (OE)	5.97	Higher			5.50	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.08	Moderate	0.56	Lower	5.66	1.55
Amphibian & Turtle Habitat (AM)	2.09	Lower	4.73	Moderate	4.41	4.96
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	5.89	Moderate	10.00	Higher	4.89	10.00
Pollinator Habitat (POL)	7.92	Higher	6.67	Moderate	6.38	6.67
Native Plant Habitat (PH)	7.03	Higher	6.89	Higher	5.92	5.98
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			1.87	Lower		2.76
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			1.64	Lower		2.86
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	2.81	Moderate	0.42	Lower	4.04	0.50
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	3.05	Lower	1.16	Lower	6.88	1.80
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.72	Moderate	2.32	Moderate	4.41	1.55
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.26	Lower	2.84	Lower	2.64	2.98
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.43	Moderate	8.93	Higher	6.05	8.77
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			1.76	Lower		2.81
	NOTE: A coor	o of 0 door not	moon the fund	tion or honofit i	a abaant from t	ho watland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-10
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	31 July 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.176867
Longitude (decimal degrees):	-66.195094
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	3.30
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geons: http://www.snb.ca/geonol/ and http://www.snb.ca/geonol/e/apps/apps/apps-e.asp
For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each
WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus
Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding
Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	Sparad and Online in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including road >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the a from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.01 - 0.1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measu
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
3		Floor nectures. The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) with twis:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include on the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	, , , , , , , , , , , , , , , , , , ,
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	1
4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Ser
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	1
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	1	
5	Distance to Large Vegetated Tract	The minimum distance from theedge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		450 m, and not separated from the 375-ha vegetated area by any width opaved roads, stretches of open water, row crops, bare ground lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscal.]		
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	4
.,		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
F6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, ent "1". "I'. "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]	er	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewle arefal imagery in Google Earth after successively drawing or estimating the boundaries of the buff of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can in drawn in Google Earth Pro by clicking on the Ruler Icon, then Circle in the pop-up menu. [AMv. P. POLV, SBMv, WBFv, WBNv]
-7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If no	t, 2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted i
		consider: The AAI's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		rows. [AMv, PHv, POLv, SBMv]
		Curisuer. The AA's vegetation is >10% woody' but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" ["NOTE: woody cover = trees & shrubs taller than 1 m.]		
8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining a that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantation.		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analys of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	
		5 to 20% of the land.	0	1
		20 to 60% of the land.	0	1
		60 to 90% of the land.	0	1
		>90% of the land. SKIP to OF10.	1	1
9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration		^	
		Impervious surface, e.g., paved road, parking lot, building, exposed rock. Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	-{
10	Distance by Road to	Bare pervious surrace, e.g., lawn, recent (<s aa,="" ago)="" along="" center="" clearcut,="" confier="" cropiand,="" dirt="" distance="" gravei="" is:<="" landslide,="" maintained="" measured="" nearest="" nearestpopulation="" or="" plantation.="" road="" road,="" td="" the="" to="" yrs=""><td>U</td><td>"Population center" means a settled area with more than about 5 regularly- inhabited structures pe</td></s>	U	"Population center" means a settled area with more than about 5 regularly- inhabited structures pe
10	Nearest Population			reopulation center means a settled area with more than about 5 regularly- inhabited structures persure square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	<100 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route
		100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
		0.5- 1 km.	0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		1 - 5 km.	1	
		>5 km.	0	

UFILL	1 Distance to Nearest From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.	
	Maintained Road	From the center of the AA, the distance to the hearest maintained public road (dirt of paved) is:		use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		<10 m.	0	
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m.	1	
0512	IARI-HIE- A	>500 m.	0	In NID and the Wallands Investor Continue to the second and the se
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammats and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wellands layer in GeoNB (despite its omissions) to show surrounding wellands an roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01 10	Water			wetlands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well
		<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	[AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	1
		50-500 m, and not separated.	0	1
		50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	1
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	1	
OF14	Distance to Large	The distance from the AA center to the closest (but separate)non-tidal body of water that is ponded during most of the year and islarger		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
	Ponded Water	than 8 hectares during most of a normal year is:		
		<100 m.	0	
		100 m - 1 km.	0	
		1 -2 km.	1	
		2-5 km.	0]
		5-10 km.	0]
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
		<100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	1
		5-10 km.	0	
		10-40 km.	0	1
		>40 km.	0	1
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	r. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the A-	A 0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. 50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		put-75% of the AA's perimeter abust upland. The test adjuins other wellands of water that is mostly wider than the AA. More than 75% of the AA's perimeter abust upland. Any remainder adjoins other wellands or water that is mostly wider than the AA.This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non-	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LiDAR imagery can provide finer elevational resolution useful for flood
		surges. Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some case	s 0	modeling. [WSv]
		levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	1
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Ther determine the AA's approximate elevation (bottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's		[FA, NR, Sens, SFSv, WCv, WSv]
		and the second and th		
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Goorde Farth, open the KM7 file NB, Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.2	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0.2	If an ACCDC report is available for this AA, it also may contain such information. [NRv] May use existing data or sample those waters as part of this wetland assessment "Harmful" should
		In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0.2	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA.	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aqualic life or humans, and: The condition is present within the AA.	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
	Watershed or Area Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF20 OF21	Watershed or Area Degraded Water Upstream Degraded Water	in Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
OF20 OF21	Watershed or Area Degraded Water Upstream	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and:	0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF20 OF21	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downstope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel.	0 0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF20 OF21	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA liself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and:	0 0 0	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF20 OF21	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 – yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters.	0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water Upstream Degraded Water Downstream	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present within the AA. The condition is present within the AA is the sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0 0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
OF20	Watershed or Area Degraded Water Upstream Degraded Water	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present within the AA is the AA is the sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly alt wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland, include that in the wetland area. The result is:	0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 - n.0. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present within the AA. The condition is present within the most result in the same than the AA is elf. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmetl) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of whic the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or using procedures described in the Manual. Divide the area of the wetland for, I gonded water is adjacent to the wetland, include that in the wetland.	0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	in Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearty all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 1 km but not connected to the AA by a channe	0 0 0 0 1	May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 = yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area (Catchment) Universelated Surface in	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 - no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA. The condition is present within the AA. The condition is present within the Maxim that flowinto the AA, but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicate		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama):
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area (Catchment)	in Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA is the AA but has not been documented in the AA itself. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above isdownslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporamalen/index.html [NR, PR, Sens, SR, WS]
OF20	Watershed or Area Degraded Water Upstream Degraded Water Downstream Wetland as a % of its Contributing Area (Catchment) Universelated Surface in	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1 - yes, 0 = no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and: The condition is present within the AA. The condition is present within the AA is the sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region. The problem described above is downslope from the AA, and: The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing waters. Sampling during both low water periods and times with high runoff (storms, snowmell) indi		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN] May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv] Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporamalen/index.html [NR, PR, Sens, SR, WS]

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	парсы			[AIII, III., 31.3, II.0, II.3]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	-
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	1
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	0	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
	, ,	and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	4
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplinfo file.	0	4
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare workshed of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	
	, and the second	Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	1	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
DF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change t blank .		
)F27		3 3 3	_	If CIC is qualished you may use the Redresk Control to the self-self-self-self-self-self-self-self-
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.nwww.sno.cargeono.rerocreatatogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 31 July 2020 Site Identifier: PLE-W-10 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

	to die	Condition of the	D. I	Definition / C. L. V.
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rariflora). Weltland surface and surrounding landscape are seldom sloping and weltland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or free and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
IA sh ncludi adja lescri	ould also include part of a e the open water part adj cent " is used synonymo bed features along their a	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should iacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
		B2.	- 1	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 175-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, NV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	4	• • • • • • • • • • • • • • • • • • • •
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	2	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	2	
lote :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover. those species together do not comprise > 50% of such cover.	0	
5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the frees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for t
		coniferous, 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		broad-leaved deciduous 1-9 cm diameter and >1 m tall. coniferous, 10-19 cm diameter.	1	, , , , , , , , , , ,
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter. broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	0	
		broad-leaved deciduous >40 cm diameter.	0	
6	Height Class Interspersion			[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
6		troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and internixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	[AM, INV, NR, PH, SBM, Sens]
6		broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	[AM, INV, NR, PH, SBM, Sens]
6		troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0 0	
7	Interspersion	troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0 0	
7	Interspersion Large Snags (Dead	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion Large Snags (Dead Standing Trees)	troad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) but above not true.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar at least 2 m tall. [POL, SBM, WBN]
7	Interspersion Large Snags (Dead	broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar

FieldF form - Non-tidal Page 1 of 5

FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEI2	is:		DO NOT INCIDUDE INTINITY BIGGE OF INCIDENS. [FA, FTK, INV., INV., O.E., FTI, 30M, 36HS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
				SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	1
		AA.		
		Other conditions.	0	
E40	0 11 1 1	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	THE RESIDENCE OF THE PROPERTY
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
E12	Helenda I	Several (extensive micro-topography).	0	TAM ND CDM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (c.g., wetland unland "messie" - 10% of the vegetated AA).	0	
F14	Soil Texture	Many (e.g., wetland-upland "mosaic", > 10% of the vegetated AA). In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly. [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Soil Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[65] 111, 111, 111, 111, 111, 111, 111, 11
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	- 1	
		Shallow Peat or organic < 40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		, ,
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	1
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or others that take shortly notices. It only
		5-25% of the herbaceous part of the AA. 25 FOW of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA. 50-95% of the herbaceous part of the AA.	0	1
		>95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	1
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
E10	Deminance of Mary	>95% of the vegetated area.	0	For this question include form or well or graminoids and factor IEC INIV DU DOL C.
F19	Dominance of Most Abundant Herbaceous	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	1
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file.		• • • • • • • •
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	
		Woody), linuschus species comerice 5 20% of the barb couer (or upadu couer if the invasions are woody)	0	-
	1	invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody)		
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant	0	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
F21	Invasive Cover Along Upland Edge	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant species is:	0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	
F21		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge.	1	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
F21		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge.	1 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	Upland Edge Fringe Wetland	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated zone within the wetland. Enter '1' if true, '0' if false.	1 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR] [WBF, WBN, WCv]
	Upland Edge	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the welland-upland boundary, the percent of the upland edge (within 3 m upslope from the welland) that is occupied by invasive plant species is: none of the upland edge (invasives apparently absent), or AA has no upland edge. some (but <5%) of the upland edge. 5-50% of the upland edge. most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the	1 0 0	species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

	% of AA Without Surface Water	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmell or rainstorms), but which is still a wetland, is:		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar: [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		<1%. In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat.
	Water	Water is: Near The AA dries up completely (so water in change); either) or pour has surface water during most years. SVID to E27.	0	[AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
		None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27. 1-20% of the AA.	0	
		20-50% of the AA.	0	
		50-95% of the AA.	0	
F26	% of Summertime	>95% of the AA. True for many fringe wetlands. At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are	0	[FA, WC]
	Water that Is Shaded	within the AA at that time is:		. ,
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded. 25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
		>75% of the water is shaded.	0	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
		1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR, OE, PH, SR, WBF, WBN, WS]
		50-95% of the AA.	0	OC, 111, SIS, WOI, WOI, WO]
		>95% of the AA.	0	
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH,
	Fluctuation Range	<10 cm change (stable or nearly so).	0	PR, SR, WBN, WS]
		10 cm - 50 cm change. 0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep. 1 - 2 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		>2 m deep. True for many fringe wetlands.	0	
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):		Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	0	WBF, WBN]
	roportions	One depth class that comprises 50-90% of the AA's inundated area. Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not	U	Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR,
	Ponded (not Flowing)	held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		WBF, WBN, WC, WS]
		<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34. 5.30% of the water.	0	
		3-30% of the water.	0	
		70-95% of the water.	0	
		>95% of the water.		
F32	Ponded Open Water -	In	0	
	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is > 0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or enlirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the Aa and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water. 120% of the ponded water.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4It the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4. The time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4. The time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 - 9 m. 10 - 29 m. 30 - 49 m.	0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Falter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 41 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. 50 100 m. or open water is absent at that time. During most of the part of the growing season when when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge.	0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[AW, FA, FK, 11VV]
		Extensive.	0	
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
F41	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (-once per 10 years). Or, water flows only into a wetland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]	0	passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):		[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
F50	Groundwater Strength	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	1	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
1 30	of Evidence	Series in st. applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Audited to these chiefla shirtly - out hot use personal puginent based of her continuors, pr., or other evidence. Consult lopographic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
F51	Internal Gradient	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is:	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
	cma Gradietti	The gradient along most of the new part within the AA is. The AA has no surface water outlet (not even seasonally).	1	outlet, divided by the flow-distance between them and converted to percent. If available, use a
		2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
		ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are		
adjace F52		nese questions are best answered by measuring from aerial images. Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	of Perimeter	vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		
		<5%. 5 to 30%.	0	
		30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	
		> 70.70, or all the area within 30 m of the AM edge is offiel Welldhus. 3Nit to F33.		

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 on, interest are expensed terrestation realized such as callos, made suppes, suream datas, or excervated pais Qualiform propy that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [F.O.L., DUM]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOE)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (find simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

FieldF form - Non-tidal Page 5 of 5

gator: Derrick Mitchell	Site Identifier: PLE-W-10		late: 31 July 2020			
essor (S) Data Form for Non-T	dal Wetlands. WESP-AC for New B	runswick. Version 2.				
Aberrant Timing of Water Inputs						
	likely to have caused the timing of water inputs (but not necessarily then	ir valuma) to shift hy hours, days, or weeks, hecoming either more i	mutad (smallar or lass fraquant naaks enraad ovar longar tima			
	ashy (larger or more frequent spikes but over shorter times). [FA, FR, IN]		nuteu (smaller or less frequent peaks spreau over longer limes			
Stormwater from impervious surfaces that drains directly to	he wetland.					
Water subsidies from wastewater effluent, septic system lea	kage, snow storage areas, or irrigation.					
Regular removal of surface or groundwater for irrigation or or	ther consumptive use.					
Flow regulation in tributaries or water level regulation in adjo-	ining water body, or other control structure at water entry points that regu	ulates inflow to the wetland.				
A dam, dike, levee, weir, berm, or fill within or downgradie	nt from the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).				
Excavation within the wetland, e.g., dugout, artificial pond, d	ead-end ditch.					
Artificial drains or ditches in or near the wetland.						
,	internal channel (incised below the historical water table level).					
Logging within the wetland.						
· · · · · · · · · · · · · · · · · · ·	sult of machinery, livestock, fire, drainage, or off road vehicles.					
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "Os" for the scores in the following row.						
	ile below, assign points. However, ir you believe the checked items had i ndition if the checked items never occurred or were no longer present.	io measurable effect on the uning of water conditions in any part of	i uie AA, uien leave lile US Tof the Scores III the following foll			
	Severe (3 points)	Medium (2 points)	Mild (1 point)			
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.			
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.			
Score the following 2 rows only if the altered inputs began with	hin past 10 years, and only for the part of the wetland that experiences th	nose.				
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.			
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.			
•			Sum=			
•		-	- Cam			
Stormwater or wastewater effluent (including failing septic sy	urring in either the wetland or its CA that is likely to have accelerated to stems), landfills, industrial facilities.		Stressor subscore=			
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FieldS form Non-tidal 1

	buting Area							
In the last column, place a check mark next to any item present in	the CA that is likely to have elevated the load of waterborne or wind	dborne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]					
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.							
Erosion from construction, in-channel machinery in the CA.								
Erosion from off-road vehicles in the CA.								
Erosion from livestock or foot traffic in the CA.								
Stormwater or wastewater effluent.								
Sediment from road sanding, gravel mining, other mining, oil/ ga	s extraction.							
Accelerated channel downcutting or headcutting of tributaries du	e to altered land use.							
Other human-related disturbances within the CA.	Other human-related disturbances within the CA.							
If any items were checked above, then for each row of the table below, assign points (3, 2, or 1 as shown in header) in the last column. However, if you believe the checked items did not cumulatively add significantly more sediment or suspended solids to the AA, then leave the "D's" for the scores in the following rows. To estimate effects, contrast the current condition with the condition if the checked items never occurred or were no longer present.								
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.					
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.					
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.					
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.					
* high-intensity= extensive off-road vehicle use, plowing, grading,	excavation, erosion with or without veg removal; $\textbf{low}\text{-}\text{intensity}\text{=}\text{veg}$	removal only with little or no apparent erosion or disturbance of	Sum=	0				
soil or sediment.								
soil or sediment.			Stressor subscore=	0.00				
soil or sediment. Soil or Sediment Alteration Within the Ass	sessment Area		Stressor subscore=	0.00				
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in	sessment Area In the welland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00				
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa		0.00				
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less). [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou	the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa		0.00				
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in is less), [CS, INV, INR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mou Leveling or other grading not to the natural contour.	the wetland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods.	allered the wetland's soil. Consider only items occurring within pa		0.00				
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Soil or Sediment Alteration Within the Ass in the last column, place a check mark next to any item present in less). (CS, INV, NR, PH, SR, STR) Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero. If any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical extent of altered soil: Recentness of significant soil alteration in wetland:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago.	0.00				
Soil or Sediment Alteration Within the Ass In the last column, place a check mark next to any item present in less). ICS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mould be compacted in the property of the result of the natural contour. Titlage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause ero if any items were checked above, then for each row of the table be effects, contrast the current condition with the condition if the checked lexical states of significant soil alteration in wetland: Duration:	the welland that is likely to have compacted, eroded, or otherwise antain bikes, especially during wetter periods. Intain bikes, espec	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.	0.00				

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-10

Date: 31 July 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.176867, -66.195094

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

an opening						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	5.68	Higher	0.00	Lower	6.10	0.00
Stream Flow Support (SFS)	3.13	Moderate	1.62	Lower	1.67	0.94
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22
Phosphorus Retention (PR)	5.71	Higher	0.00	Lower	6.95	0.33
Nitrate Removal & Retention (NR)	2.25	Lower	1.56	Lower	5.22	2.50
Carbon Sequestration (CS)	8.49	Higher			8.22	
Organic Nutrient Export (OE)	5.58	Higher			5.29	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	5.09	Moderate	0.79	Lower	5.66	1.67
Amphibian & Turtle Habitat (AM)	2.12	Lower	5.13	Moderate	4.42	5.20
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.77	Moderate	10.00	Higher	5.61	10.00
Pollinator Habitat (POL)	8.92	Higher	6.67	Moderate	7.19	6.67
Native Plant Habitat (PH)	8.16	Higher	7.48	Higher	6.38	6.49
Public Use & Recognition (PU)			2.07	Lower		1.80
Wetland Sensitivity (Sens)			1.54	Lower		2.67
Wetland Ecological Condition (EC)			7.83	Higher		8.75
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	3.13	Moderate	0.00	Lower	6.10	0.00
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.37	Higher	1.10	Lower	7.76	1.76
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	4.52	Moderate	1.21	Lower	4.41	1.27
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.27	Lower	3.08	Lower	2.65	3.12
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.44	Higher	9.02	Higher	6.79	8.86
WETLAND CONDITION (EC)			7.83	Higher		8.75
WETLAND RISK (average of Sensitivity & Stressors)			0.88	Lower		2.50
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	he wetland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLE-W-11
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	31 July 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.179169
Longitude (decimal degrees):	-66.197518
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	4.50
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	100
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the Q (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html
GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

Geomb. http://www.sinu.ca/geomb./ and http://www.sinu.ca/geomb./ geomb./ geomb Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity,

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a "1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised.
		New Brunswick	- 1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	openia dala onoso in a pantada province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
OF2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	0	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the area
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	1	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	
OF3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	1
OF4	Size of Largest Nearby	>100 hectares. The largest vegetated patch or corridor that includes the AA's vegetation plus all adjacent upland vegetation that is not lawn, row crops,	U	See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above).
UF4	Vegetated Tract or Corridor	heavily grazed lands, conifer plantation is:		Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Comaci	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	-
		1 to 10 hectares. 10 to 100 hectares.	0	-
		100 to 1000 hectares.	0	-
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes.]	1	
OF5	Distance to Large	The minimum distance from the edge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at
	Vegetated Tract	plantation) larger than 375 hectares (about 2 km on a side), is:		GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
	J	<50 m, and not separated from the 375-ha vegetated area by any width of paved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes.]	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	1
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". If NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation"]		For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing areal imagery in Google Earth after successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMw, PHv, POLv, SBMv, WBFv, WBNv]
OF7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not,	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in
		consider: The AA's pagetation is a 100's pagets' but unloads within 1 km have a 100's pagets gaves. If so enter "2" and continue to OFR. If not		rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter *2" and continue to OF8. If not, consider:		
		The ANs vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [* NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining area		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis
	Percentage	that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	
		5 to 20% of the land.	0]
		20 to 60% of the land.	0	
		60 to 90% of the land.	0	
		>90% of the land. SKIP to OF10.	1	
OF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	
OF10	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearest population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Nearest Population	<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	100 - 500 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
		0.5- 1 km.	0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		1 - 5 km.	- 1	1
		>5 km.	0	1
			-	

OF11	Distance to Nearest From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:			Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m. >500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other	U	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and
		separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1= yes can move to all, 0= no. Change to blank if there are no other wetlands within 5 km.	0	roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well. [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features. 50-500 m, and not separated.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
0014	Distance to Large	None of the above (the closest patches or corridors that large are >1 km away).	1	Determine this beginning and brown in Courts Forth (Court MDE MDN)
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate) non-tidal body of water that is ponded during most of the year and is larger than 8 hectares during most of a normal year is: 100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	
		1 - 2 km.	1	
		2-5 km.	0	
		5-10 km.	0	1
OF15	Tidal Proximity	>10 km. The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:	0	In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever
5. 15		The distance norm the AA edge to the crosest roan water body (regardless on its salinity) is. <100 m.	0	is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		100 m · 1 km.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local information if available may be preferable. [FA, WBF]
		1 - 5 km.	1	вния палот в ачавале тау не ргетегане. [г А, чтог]
		5-10 km.	0	
		10-40 km.	0	
051/	Haland Edna Contact	>40 km.	0	[NR. SBM. Sens]
UF 16	Upland Edge Contact	Select one: The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water.	0	[NK, SBM, Selts]
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA. This will be true for most assessments done with WESP-AC.	1	
OF17	Flood Damage from Non- tidal Waters	Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data)
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling. (WSv)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges.	Ů	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable to river flooding unrelated to tidal storm surges.	1	
OF18	Relative Elevation in Watershed	In Google Earth, enable the Terrainh saugus. In Google Earth, enabl		[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0.2	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:	,	be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv, PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flow into the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing	0	
		waters.		
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water Downstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
		The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmell) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly	1	
		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AI may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding man, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result its:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0	
		0.01 to 0.1.	0	
		0.1 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised	0	
OF23	Unvegetated Surface in	The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots,		[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about : <10%.	1	
			0	1
		10 to 25%.	0	

OE24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
UF24	Transport From Opsiope	indicated by the following:		[IVRV, PRV, SRV, WSV]
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or (f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		The survivors is.		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	- 1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
		Northward (N, NE). north-facing contributing area.	0	
		, , , , , , , , , , , , , , , , , , ,	0	
		Southward (S, SW). south-facing contributing area. Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlets
UF20	(Path Length)	The nonzoniarnow distance from the wedahu's linet to object is.		and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(<10 m.	0	
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV, NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	stocked. In NB, the list of stocked waters is at:
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/StockedWaters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to have other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented [mark all applicable]:		Request information from ACCDC and/or conduct your own survey at an appropriate season using an
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying Supplnfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare worksheet	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
0520	Innered and Died Anne	None of the above, or no data.	0	The second of the least the second by the second of the se
OF30	Important Bird Area (IBA)	In Google Earth, open the KMZ file that accompanies this calculator, called IBAs_Canada. The AA is all or part of an officially designated IBA. Enter 1= yes, 0= no.	0	The source of this layer, which should be checked periodically for updates, is: http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504		* ·		1 1 1
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity, Determine the predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3), If outside of region shown in map, change to blank.	0	This was provided by Dr. David Leske. [WBNv]
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area — but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of		
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC and agencies for more recent information.		
OFC:		3		(rout
OF34	Conservation Investment		0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank (not		
OE35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
J1 33	gation investment	information, change to blank .	U	l. ⊲1
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank .		
OF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
0.0,	outdated trogion	moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	Ü	http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank .		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands.Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
5. 50	p	information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	• • • • • •
		Includes many publicity-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltered	J	
		conditions.		
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 31 July 2020 Site Identifier: PLE-W-11 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
F1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to B below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also.
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at loe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., catrail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of le the open water part ad cent " is used synonymo ibed features along their	the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should flacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
F2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1.	0	
-3	Woody Height & Form	B2. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella),
	Diversity	if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%. coniferous trees (may include tamarack) taller than 3 m.	2	huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees (may include ramarack) railer main s m.	2	
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	1	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	0	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
Note :		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	1	[PH, POL, SBM, Sens]
	Species	those species together do not comprise > 50% of such cover.	0	
F5	Woody Diameter Classes	Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge (perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for the
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species [AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter.	1	
		coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter.	0 0	
6	Height Class		0 0	[AM, INV, NR, PH, SBM, Sens]
-6	Height Class Interspersion	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	_	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size	0	[AM, INV, NR, PH, SBM, Sens]
F6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0 0 0	[AM, INV, NR, PH, SBM, Sens]
F6	Interspersion	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They <u>each</u> comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0	
F6		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely	0 0 0	
F6	Interspersion Large Snags (Dead	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 37.0%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B7 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an
F6 F7	Interspersion Large Snags (Dead Standing Trees)	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than 8/ hectare which exceed this diameter. Several (>8/bhectare) but above not true.	0 0 0	Snags are dead standing Irees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
F6 F7 F7	Interspersion Large Snags (Dead	coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter. Foliow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 37.0%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B7 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 0 1 0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

FieldF form - Non-tidal Page 1 of 5

FQ	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE INTINITY BIGGE OF INCIDENS. [FA, FTK, INV., INV., O.E., FTI, 30W, 36HS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	-
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	- 1	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the AA.	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the AA.	0	
		Other conditions.	0	
F12	Cround Imagularity	Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, guilles, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed -10 cm compared to most of the area within a few meters surrounding them is:		The depressions may be of fundation induction gift, paw, e.c., inv., ink, Ph, PoL, Pk, Sow, Sk, WS
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	1
		Intermediate.	- 1	
Eac		Several (extensive micro-topography).	0	CAM NO COM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Son Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[65] 111, 111, 111, 111, 111, 111, 111, 11
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Fings: includes sitt clay sitt soils that make a ribbon longer than 2 cm when moistaned relied squeezed, and extended between thumb and	0	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	U	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		33
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	U	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	- 1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	or others that those shortly horrors. It only
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	-
		>95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	1	
		5-50% of the vegetated area.	0	
		50-95% of the vegetated area.	0	1
F19	Dominance of Most	>95% of the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
1 19	Abundant Herbaceous	Determine which two nerbaceous species comprise the greatest portion of the nerbaceous cover (excluding mosses and floating-leaved aquatic plants). Then choose one of the following:		r or and goodwin, include terms as well as grammous and roles. [E.C., 1199, PH, POL, Sells]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	1
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0	1
		woody).		
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	-
F21	Invasive Cover Along	invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody). Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant.	U	If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
. 21	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
	, and the second	none of the upland edge (invasives apparently absent), or AA has no upland edge.	- 1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge.	0]
		5-50% of the upland edge.	0	1
F22	Fringe Wetland	most (>50%) of the upland edge. During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
1 22	i inge welland	pouning most of the year, open water within or adjacent to the vegetated part of the welland is much wider than the maximum width of the vegetated zone within the welland. Enter "1" if true, "0" if false.	U	[max., max, max]
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

F24		The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	onded (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water.	0 0 0	on the water surface or entirely submersed beneath it.
	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water.	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. 1100% of the ponded water.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area <u>in the AA</u> that separates	0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 4It the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: <1 m.	0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-99% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m.	0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators, [AM, CS, NR, OE, PH, PR,
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m, or open water is absent at that time.	0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 70-99% of the ponded water. 100% of the ponded water. 100% of the ponded water. 41 the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m.	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 70-9% of the ponded water. 70-9% of the ponded water. 700% of the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 70 the ponded water. 10 of the ponded water. 10 -9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a	0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aqualic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finter "1" and SKIP to F41 (Floating Algae & Duckweed). 5.30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 100 ye me one water within the AA is: <1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is:	0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or ~1% of the An and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: < I m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: <1% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the A and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 30-70% of the ponded water. 30-70% of the ponded water. 100% of the ponded water. 1 - 9 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 fibe part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: This percentage of the AA's water edge. 2-55-0% of the water edge. 50-75% of the water edge. 50-75% of the water edge.</td <td>0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0</td> <td>on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]</td>	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN]
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 5-50% of the water edge. 7-55% of the water edge. 7-55% of the water edge. 1-25% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
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F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	If the deepest paich of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter *1* and continue. If not, enter *0* and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E40	In elekt of televisid	Extensive.	0	DAMAN
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, ditch, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a welland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	0	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	1	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:	Ŷ	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44		drain the wetland artificially, or water is pumped out of the AA.	Ü	
F44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
			_	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels. Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate pealland (e.g., Labrador tea) are prevalent. Enter *11. Neither of above. Enter *11.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.]		
		Conductivity is [Enter the reading in µS/cm in the column to the right.] Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter *1*.	0	
		Neither of above	1	
F49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE):	0	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in vegetated areas near surface water.	0	
FEO	Croundy-t C:	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	Adhere to there exists existing strictly do not we record induced to the control of the control
F50	Groundwater Strength of Evidence	Select first applicable choice: Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult loggraphic maps to detect breaks in slope described here. Rust deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, CB, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5.	0	
FE1	Internal Cradinat	Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	1	This is not the come as the charaline clane. It is the about 125
F51	Internal Gradient	The gradient along most of the flow path within the AA is: < or the AA has no surface water outlet (not even seasonally).	1	This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a
		4. Or the AA has no surface water outlet (not even seasonally). 2-5%.	0	clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than -1 km), this may be estimated using Google Earth to determine the minimum and
		6-10%. >10%.	0	maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
Note fo	or the next three quest	>10%. ions: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are	0	ן אינון אינון, אינון
adjacei	nt. In many situations, th	nese questions are best answered by measuring from aerial images.		IAM FA FD INV NDv DH DOL DDv CDM Cone CDv CTD M/DMI
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
		<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%. >90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	0	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 to m, there are executed televation realizes such as callos, and a suppes, surean varies, or exercise pins (our interpretable extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [FOL, JUNI]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

FieldF form - Non-tidal Page 5 of 5

	Site Identifier: PLE-W-11		ate: 31 July 2020			
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2				
Aberrant Timing of Water Inputs	Wedanies. West As for New B	Turiowick. Voloion 2.				
	the state of the s					
In the last column, place a check mark next to any item that is likely to more temporal homogeneity of flow or water levels) or more flashy (la			nuted (smaller or less frequent peaks spread over longer time:			
Stormwater from impervious surfaces that drains directly to the wetla	and.	-				
Water subsidies from wastewater effluent, septic system leakage, sn	now storage areas, or irrigation.					
Regular removal of surface or groundwater for irrigation or other con-	sumptive use.					
Flow regulation in tributaries or water level regulation in adjoining wa						
A dam, dike, levee, weir, berm, or fill within or downgradient from t						
Excavation within the wetland, e.g., dugout, artificial pond, dead-end						
Artificial drains or ditches in or near the wetland.						
Accelerated downcutting or channelization of an adjacent or internal	channel (incised below the historical water table level).					
Logging within the wetland.						
Subsidence or compaction of the wetland's substrate as a result of m						
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "Os" for the scores in the following row						
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	Severe (3 points)	Medium (2 points)	Mild (1 point)			
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.			
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.			
Score the following 2 rows only if the altered inputs began within past						
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.			
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.			
			Sum=			
Accelerated Inputs of Contaminants and/or S In the last column, place a check mark next to any item occurring in Stormwater or wastewater effluent (including failing septic systems), Metals & chemical wastes from mining, shooting ranges, snow storay	either the welland or its CA that is likely to have accelerated the landfills, industrial facilities.	,				
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FieldS form Non-tidal 1

	buting Area								
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]						
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.								
Erosion from construction, in-channel machinery in the CA.									
Erosion from off-road vehicles in the CA.									
Erosion from livestock or foot traffic in the CA.									
Stormwater or wastewater effluent.									
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.								
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.								
Other human-related disturbances within the CA.									
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,						
	Severe (3 points)	Medium (2 points)	Mild (1 point)						
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.						
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.						
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.						
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.						
igh-intensity= extensive off-road vehicle use, plowing, grading, excavation, erosion with or without veg removal: low-intensity= veg removal only with little or no apparent erosion or disturbance of il or sediment.			Sum=	0					
soil or sediment.									
soil or sediment. Soil or Sediment Alteration Within the As.	sessment Area		Stressor subscore=						
Soil or Sediment Alteration Within the As:	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa							
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present in is less). [CS, INV, NR, PH, SR, STR]	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa							
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLE-W-11

Date: 31 July 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.179169, -66.197518

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.								
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)		
Water Storage & Delay (WS)	5.43	Higher	0.00	Lower	5.91	0.00		
Stream Flow Support (SFS)	2.81	Lower	1.74	Lower	1.50	1.01		
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00		
Sediment Retention & Stabilisation (SR)	7.56	Higher	0.37	Lower	8.33	0.22		
Phosphorus Retention (PR)	5.24	Higher	0.00	Lower	6.62	0.33		
Nitrate Removal & Retention (NR)	2.62	Moderate	7.19	Moderate	5.45	7.50		
Carbon Sequestration (CS)	8.49	Higher			8.22			
Organic Nutrient Export (OE)	6.50	Higher			5.78			
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00		
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00		
Aquatic Invertebrate Habitat (INV)	6.27	Higher	0.77	Lower	6.08	1.66		
Amphibian & Turtle Habitat (AM)	2.12	Lower	5.09	Moderate	4.42	5.18		
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00		
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00		
Songbird, Raptor, & Mammal Habitat (SBM)	6.68	Moderate	10.00	Higher	5.54	10.00		
Pollinator Habitat (POL)	8.28	Higher	6.67	Moderate	6.67	6.67		
Native Plant Habitat (PH)	7.44	Higher	7.25	Higher	6.09	6.29		
Public Use & Recognition (PU)			2.07	Lower		1.80		
Wetland Sensitivity (Sens)			5.72	Higher		3.92		
Wetland Ecological Condition (EC)			7.83	Higher		8.75		
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34		
Summary Ratings for Grouped Functions:								
HYDROLOGIC Group (WS)	2.81	Moderate	0.00	Lower	5.91	0.00		
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	6.35	Higher	4.85	Moderate	7.75	5.09		
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	5.20	Moderate	1.29	Lower	4.71	1.28		
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.27	Lower	3.05	Lower	2.65	3.11		
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	7.87	Higher	8.99	Higher	6.38	8.83		
WETLAND CONDITION (EC)			7.83	Higher		8.75		
WETLAND RISK (average of Sensitivity & Stressors)			2.97	Moderate		3.13		
	NOTE: A scor	e of 0 does not	mean the func	tion or benefit i	s absent from t	ne wetland. It		

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLW-W-04
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	10 September 2020
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.166276
Longitude (decimal degrees):	-66.205112
Is a map based on a formal on-site wetland delineation available?	
Approximate size of the Assessment Area (AA, in hectares):	0.66
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	10
What percent (approx.) of the wetland were you able to visit?	10
What percent (approx.) of the AA were you able to visit?	
Were you able to ask the site owner/manager about any of the questions?	
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	
Have you attended a WESP-AC training session? If so, indicate approximate month & year	
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will require using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html

GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, PO= Pollinator Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1*. Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised.
		New Brunswick	1	In the function and benefits models, it also triggers the automatic exclusion of indicators for which no spatial data exists in a particular province.
		Nova Scotia	0	spatial data exists in a particular province.
		Prince Edward Island	0	
		Newfoundland-Labrador	0	
)F2	Ponded Area Within 1 km.	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads >50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water
		<0.01 hectare (about 10 m x 10 m).	- 1	extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the ar
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure
		0.1 - 1 hectare.	0	tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
		>100 hectares.	0	
)F3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
-,	0. (1	>100 hectares.	0	
F4	Size of Largest Nearby Vegetated Tract or Corridor	The largest vegetated patch or corridor that includes the AA's vegetation plus aladjacent upland vegetation that is not lawn, row crops, heavily grazed lands, confler plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sen:
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	
		10 to 100 hectares.	0	
		100 to 1000 hectares.	0	
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes]	- 1	
F5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest vegetated land (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		<50 m, and not separated from the 375-ha vegetated area by any width ofpaved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscape.]	1 s.]	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated.	0	
		0.5 - 5 km, but separated by those features.	0	
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	
)F6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous* but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to OF7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter "1". "NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grasslike plants in this use of "herbaceous vegetation".	2	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing areal imagery in Google Earth fire successively davning or estimating the boundaries of the buffer of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler Loon, then Circle in the pop-up menu. [AMV, PH POLV, SBMV, WBFV, WBNV]
)F7	Woody Uniqueness	The AA's vegetation cover is >10% woody* but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider:	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody* but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not, consider:		
		The AA's vegetalion is >10% woody" but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1" [" NOTE: woody cover = trees & shrubs taller than 1 m.]		
F8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining are that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysi of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0	1
		5 to 20% of the land.	0	1
		20 to 60% of the land.	0]
		60 to 90% of the land.	0	
		>90% of the land. SKIP to OF10.	1	
F9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	1
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	1
F10	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearestpopulation center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Nearest Population		^	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the
	Center	<100 m.	0	route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
		100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		0.5-1 km. 1 - 5 km.	0	which most the Chicha.[LAV, LIVV, MIXV, FTT, FO, SDIVI, WDFV]
		5 km.	0	
		NO MILE	0	

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:		Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool.
	Maintained Road	<10 m.	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m. 100 - 500 m.	0	
		>500 m.	0	
OF12	Wildlife Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), lawns, bare ground, and/or marine waters, mark 1 = yes can move to all, 0 = no. Change toblank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands a roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compare). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
01 13	Water	450 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wellands layer as we [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated.	1	
		50-500 m, but separated by those features. 0.5 - 1 km. and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	1
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate)non-lidal body of water that is ponded during most of the year and islarger than 8 hectares during most of a normal year is:		Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		<100 m.	0	
		100 m - 1 km. 1 - 2 km.	0	-
		2-5 km.	1	
		5-10 km.	0	1
		>10 km.	0	
OF15	Tidal Proximity	The distance from the AA edge to the closesttidal water body (regardless of its salinity) is:		in Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whicheve is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	closer. If you need to see now far upriver a river is tidal, see the kinz life provided with this calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	1	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		5-10 Km. 10-40 km.	0	-
		>40 km.	0	
OF16	Upland Edge Contact	Select one:		[NR, SBM, Sens]
		The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water	. 0	
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wetlands or water that is mostly wider than the AA	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA. More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA.This	0	
		will be true for most assessments done with WESP-AC.		
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the mer
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling, IWSV)
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-lidal river. In some cases evees, upriver dams, or other meastures may partly limit damage or risk from smaller events. Maps do not show Flood Zone or Flood Risk areas for no such mapping has been done locally) and there appears to be infrastructure	0	
		vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there i no infrastructure vulnerable	1	
OF18	Relative Elevation in Watershed	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (lower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then determine the AA's approximate elevation (bottom right, NOT the "eye att"). Then move cursor around to determine the watershed's	0.23	[FA, NR, Sens, SFSv, WCv, WSv]
OF19	Water Quality Sensitive	maximum and minimum elevation. Divide the AA's elevation by the (max-min). In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Watershed or Area Degraded Water	Enter 1= yes, 0= no. Sampling indicates a problem with concentrations ofmetals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should
UFZU	Upstream	water, high temperatures) being present at levels harmful to aquatic life or humans, and:	0	way use existing data, or sample index waters as part or this wettain assessment. Faithful should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv PRv, SRv, STR, WBF, WBN]
		The condition is present within the AA. The condition is present in waters within 1 km that flowinto the AA, but has not been documented in the AA itself.	0	1
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly all wetlands in this region.	1	
OF21	Degraded Water Downstream	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel.	0	
		The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmett) indicates no problems in either the AA or inflowing	0	
		waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream)This is the situation for nearly	1	
OFC		all wetlands in this region.		
OF22	Wetland as a % of Its Contributing Area (Catchment)	From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AM may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding and/or busing procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland area. The result is:		Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/loporama/en/index.html [NR, PR, Sens, SR, WS]
		< 0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1.	0	
		0.1 to 1.	1	
OF23	Unvegetated Surface in	>1 (welland is larger than its catchment (e.g., welland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised bog). The proportion of the AA's contributing area (measured to no more than 1000 m upslope) that is comprised of buildings, roads, parking lots	0	[FA, INV, NRv, PRv, SRv, STR, WCv, WSv]
OI 23	the Contributing Area	other pavement, exposed bedrock, landslides, and other mostly-bare surface is about :		C, 1107, 1107, FRY, 510, WOY, WSY
		<10%.	1	
		<10%. 10 to 25%.	0	

OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), a	9	[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened, (c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	1
		Somewhat true.	0	1
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
01 23	нарост			[Am, MC, 31-3, NO, NO]
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlet
	(Path Length)	10	0	and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
		<10 m.	0	
		10 - 50 m.	0	
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
		>2 km, or wetland lacks an inlet and outlet.	0]
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA		This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
		and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Nark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have be
. 20				stocked. In NB, the list of stocked waters is at:
		is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/Stocked
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to hav other fish at least seasonally.	0	
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	- 1	
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented mark all applicable:		Request information from ACCDC and/or conduct your own survey at an appropriate season using a
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplinfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer	U	
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the accompanying Supplnfo file.	0	
			0	-
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file. Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare worksher.	0	-
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).	U	
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called BAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
01 30	(IBA)	III Google Latti, open the Kiviz life that accompanies this calculator, called BAS_Carlada. The AATS all or part of an officially designated IBA. Enter 1= yes, 0= no.	U	http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
0504	` '			
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2), >30 (enter 3). If outside of region shown in map, change toblank.		
OF32		If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	1	[·
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC at	d	
		agencies for more recent information.		
DF34	Conservation Investment	The AA is part of or contiguous to a wetland on which public or private organizational funds were spent to preserve, create, restore, or	0	[PU]
		enhance the wetland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change tlolank (not	1	[·
		0).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .		
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
. 50		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends	l	j
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change toblank.		
)F27		3 3 3	_	If CIS is available, you may use the Dedrock Cool
DF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column), moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and	0	If GIS is available, you may use the Bedrock Geology shapefile obtainable at http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and water is not acidic (pH is usually >8).See Figure A-6 in Appendix A of the Manual. If no map coverage, change toblank.		mup.mwww.snb.cargeonb.rerbCrcatalogue-c.asp [AM, FA, FK, INV, PH]
		mater is not estate (pr. 15 asatally 20). See Figure 250 in Appendix 25 of the Wallati. In the Hidp coverage, change (width).		
			<u></u>	
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unalter	4	
		conditions.	<u></u>	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.	1	
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	1

Date: 10 September 2020 Site Identiffier: PLW-W-04 Investigator: Derrick Mitc

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

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#	Indicators	Condition Choices	Data	Definitions/Explanations
-1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (Myrica gale) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 μS/cm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (<i>Carex rarillor</i> a). Welland surface and surrounding landscape are seldom sloping and welland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	0	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	1	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., cattail, bufusch, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
AA sh includ " adja descri	ould also include part of i e the open water part adj cent " is used synonymou bed features along their i must match. The featur	he AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically As should lacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usly with abutting, adjoining, bordering, contiguous – and means no upland (mammade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent – a large portion of their es do not have to be hydrologically connected in order to be considered adjacent.		
F2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1. A2.	0	
		B1. B2.	0	
F3	Woody Height & Form Diversity	DZ. Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75 >55%, 4 if 50-75%, 3 if 72-55%, 2 if 5-25%, 1 if -55%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.	0	Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Moreila), huckleberry, cranberry, cloudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the
		coniferous trees (may include tamarack) taller than 3 m.	5	trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		deciduous trees taller than 3 m. coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	0	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees. coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation.	0	
		deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	0	
Note:		F3 was marked 2 or greater , SKIP to F9 (N fixers).		
F4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one: those species together comprise > 50% of such cover.	1	[PH, POL, SBM, Sens]
ГС	Species Meady Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge	0	Estimate the diameters at chest height. If small-diameter trees are overtopped (shaded) by larger
ıJ	Woody Diameter Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA.		Estimate the unimers at criest regin. If sharmanness here are very expect sharest player ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for the minimum 5% canopy requirement in this question. The trees and shrubs need not be welland species.
		coniferous, 1-9 cm diameter and >1 m tall. broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	0	
		coniferous, >40 cm diameter.	1	
Г4	Holaht Class	broad-leaved deciduous > 40 cm diameter.	0	[AM, INV, NR, PH, SBM, Sens]
10	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		(pour, intr, FTI, Julion, Seria)
		A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
		A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises > 70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column:	0	
		B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	1	
F7	Large Snags (Dead	B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is:	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are
. ,	Standing Trees)	None, or fewer than 8/ hectare which exceed this diameter.	0	Shags are used startung trees that other (not aways) lack bank and tollage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
		Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	1	
		Several (>8/hectare) but above not true.	0	
F8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is:		Exclude temporary "burn piles." [AM, INV, POL, SBM]
F8	Downed Wood	The number of downed wood pieces longer than 2 m and with diameter >10 cm, and not persistently submerged, is: Few or none that meet these criteria.	0	Exclude temporary "burn piles." [AM, INV, POL, SBM]

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
,	IN FIXEIS	is:		Do not include (4 liking algae of ilciteris: [; 7, 7 K, 1144, 1144, 02, 1 H, 3518, 3518]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	1	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	0	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR,
				SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	1	
		AA. Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA.		
		Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits, raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	0	
		Intermediate.	1	
Ec.		Several (extensive micro-topography).	0	TALL ND COM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	0	
		Intermediate (1 - 10% of vegetated part of the AA). Many (6 g. westland unland "massis" - 10% of the vegetated AA).	0	
F14	Soil Texture	Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA). In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	U	[CS, NR, OE, PH, PR, Sens, SFS, WS]
	Son Texture	least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		[65] 111, 62, 111, 11, 6613, 613, 110]
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger.		
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic <40 cm deep.	1	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended	0	
F15	Shorebird Feeding	between thumb and forefinger. During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		, , , , , , , , , , , , , , , , , ,
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:	0	[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	1	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F17	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA.	0	
		5-25% of the herbaceous part of the AA. 25-50% of the herbaceous part of the AA.	0	
		50-95% of the herbaceous part of the AA.	0	
		>95% of the herbaceous part of the AA.	0	1
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegetated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area.	0	
F19	Dominance of Most	>95% of the vegetated area. Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	0	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
1 19	Abundant Herbaceous	aquatic plants). Then choose one of the following:		r or and goodwir, include terms as well as grammulus and rolls. [E.C., 1997, PH, POL, Setts]
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplinfo		[EC, PH, POL, Sens]
		file.		
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	0	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	1	
		woody). invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody).	0	
		invasive species comprise 3-20% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic species cannot be identified, answer "none". [PH, STR]
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	0	Species cantion de lucitimen, ariswer TIUTE . [PT, STK]
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	
		most (>50%) of the upland edge.	0	
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
		The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
F23	Lacustrine Wetland	a normal year.		

 $FieldF \ form-Non-tidal \\ Page \ 2 \ of \ 5$

F24	% of AA Without	The percentage of the AA that never contains surface water during an average year (that is, except perhaps for a few hours after snowmelt or		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by
	Surface Water	rainstorms), but which is still a wetland, is: <1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]
		1-25% of the AA, or <1% but >0.01 ha never contains surface water.	0	
		25-50% of the AA never contains surface water.	0	
		50-75% of the AA never contains surface water.	0	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1" and SKIP to F42 (Channel Connection).	1	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INV, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	,,,,,,,,,
		1-20% of the AA.	0	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime	At mid-day during the warmest time of year, the area of surface water within the AA that is shaded by vegetation and other features that are within the AA at that time is:		[FA, WC]
	Water that Is Shaded		0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded.	0	
		50-75% of the water is shaded.	0	
F27	0/ -6 0 0 46 -4 1-	>75% of the water is shaded.	0	
F21	% of AA that is Flooded Only	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial)
	Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	,	1-20% of the AA, or <1% but >0.01 ha. 20-50% of the AA.	0	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	0	FT, JI, WUIN, WJ]
		0.5 - 1 m change.	0	
		1-2 m change.	0	
		>2 m change.	0	
(Conne	ection).	d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	Ü	If a host is unqualiable, estimate this bu appointains well and six and local topography. Or if timing any
F29	Predominant Depth Class	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA, is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
		<10 cm deep (but >0).	0	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep.	0	
F30	Depth Classes -	>2 m deep. True for many fringe wetlands. When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
30	Evenness of			WBF, WBN]
	Proportions	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above). One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is:		Nearly all wetlands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC. WSI
	orided (not riowing)	<5% of the water, or it occupies <100 sq.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	0	,,,
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32	Ponded Open Water -	>95% of the water.		
_	Minimum Size	During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season,		Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
F33		m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0 0	on the water surface or entirely submersed beneath it.
F33	% of Ponded Water	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	on the water surface or entirely submersed beneath it.
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F34	% of Ponded Water that is Open Width of Vegetated Zone within Wetland	m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, If false, enter "0" and SKIP to F41 (Floating Algae & Duckweed). In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is: None, or -1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed). 1-4% of the ponded water. Finer "1" and SKIP to F41 (Floating Algae & Duckweed). 5-30% of the ponded water. 30-70% of the ponded water. 70-9% of the ponded water. 100% of the ponded water. At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates adjoining uplands from open water within the AA is: 1 m. 1 - 9 m. 10 - 29 m. 30 - 49 m. 50 - 100 m. > 100 m. or open water is absent at that time. During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a sloope less than about 5% measured within 5 m landward of the water) is: -1% of the water edge. 5-50% of the water edge. 7-55% of the water edge. 7-55% of the water edge. 1-25% of the water edge. 1-25% of the water edge.	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	on the water surface or entirely submersed beneath it. [AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC] "Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR, SBM, Sens, SR, WBN] If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
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FieldF form - Non-tidal Page 3 of 5

F37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water.	0	
	water	Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water area.	0	
F38	Persistent Deepwater	if the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the growing season, enter "1" and continue. If not, enter "0" and SKIP to F42 (Connection).	0	
F39	Area Non-vegetated Aquatic	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is		For this question, consider only the wood that is at or above the water surface. Estimates of underwater
	Cover	provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted. [AM, FA, FR, INV]
		Little or none. Intermediate.	0	[Pag, 17, 115, 114]
E40	teeleted televid	Extensive.	0	BAIDAR
F40	Isolated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths > 1 m on all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.	0	[WBN]
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If untrue or uncertain, enter "0".	0	[EC, PR, WBF]
F42	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is: [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCV, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).	0	
		No surface water flows out of the welland except possibly during extreme events (-once per 10 years). Or, water flows only into a welland, ditch, or lake that lacks an outlet. SKIP to F47 (pH Measurement).	U	
F43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water: Medity passes through a rine, where the passes through the passes through a rine, where the passes through a rine, where the passes through a rine water through the passes through a rine water.	^	"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography) that does not appear to drain the wetland artificially during most of the growing season.	0	
		Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features. Is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which	0	
F44	Tributary Channel	drain the welland artificially, or water is pumped out of the AA. At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
	,	permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	0	F42 above. [NRv, PH, PRv, SRv]
F45	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	0	[WCv]
F46	Throughflow Resistance	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the incoming water].		[FA, FR, INV, NR, OE, PR, SR, WS]
	resistance	Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised) channels that have minimal contact with wetland vegetation, or through a zone of open water such as an instream pond or lake.	0	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	0	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels. Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
F47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter *1*. Neither of above. Enter *1*.	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
F48	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µSicm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
F49	Beaver Probability	Neither of above Use of the AA by beaver during the past 5 years is (select most applicable ONE):	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
		Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	0	
		vegetated areas near surface water. Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed.	1	
F50	Groundwater Strength of Evidence	Select first applicable choice:		Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	or Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	estudence. Consult uppographic maps to udect of each in slope described neter. Add reposts associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.	0	
F51	Internal Gradient	The gradient along most of the flow path within the AA is:		This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and
		<2% or the AA has no surface water outlet (not even seasonally).	0	outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is
		2-5%. 6-10%.	0	large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR,
No.		>10%.	0	SR, WBF, WBN, WS]
adjacei	nt. In many situations, th	ons: If the AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are lese questions are best answered by measuring from aerial images.		
F52	Vegetated Buffer as % of Perimeter	Within a zone extending 30 m laterally from the AA's edge with upland and/or other wetlands, the percentage that contains perennial vegetation cover (except lawns, row crops, heavily grazed land, conifer plantations) is:		[AM, FA, FR, INV, NRv, PH, POL, PRv, SBM, Sens, SRv, STR, WBN]
	a Gilliotol	<5%.	0	
		5 to 30%. 30 to 60%.	0	
		60 to 90%.	0	
		>90%, or all the area within 30 m of the AA edge is other wetlands. SKIP to F55.	1	

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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or devel in Bullet			
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
		Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	0	
		5-30%. >30%.	0	4
55	Cliffs or Steep Banks	>30%. In the AA or within 100 m, there are elevated terrestrial features such as cliffs, talus slopes, stream banks, or excavated pits (but not riprap)	0	Do not include upturned trees as potential den sites. [POL, SBM]
33	Cilis of Steep Baliks	In the zero of within 1 to m, there are executed televation realizes such as callos, and a suppes, surean varies, or exercise pins (our interpretable extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	0	DO NOI INCIDURE UPERS AS POTENTIAL DEL SILES. [FOL, JUNI]
56	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [C NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago.	0	
		Yes, and created or expanded 3-20 years ago.		4
		Yes, and created or expanded within last 3 years.	0	-
		Yes, but time of origin or expansion unknown. Unknown if new or expanded within 20 years or not.	0	-
57	Burn History	More than 1% of the AA's previously vegetated area:	0	Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
	Durit History			2 South of Statings (in manages makey Spacea totalions) of ask tandomici. [63, FH, STK
		Burned within past 5 years.	0	4
		Burned 6-10 years ago.	0	4
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	(DLI CTD WOF)
58	Visibility	The maximum percentage of the welland that is visible from the best vantage point on public roads, public parking lots, public buildings, or public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		[PU, STR, WBFv]
		<25%.		
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	Ü	[PU, STR]
J7	Uses - Actual or			[10, 310]
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets.	1	
		Maintained roads, parking areas, or foot-traits are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via contiquous waters.	0	
		Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on traits outside of the AA unless more than half the welfand is visible from the traits and they are within 30 m of the welfand edge. In that case include only the accupied by the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
61	Fraguently Violted	>95% of the AA with or without inhabited building nearby.		TAMA DILI DILI COMI CTD. MIDE MIDAN
01	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
		<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	4
		50-95%.	0	4
	DIAD O II	>95% of the AA.	0	(DLL DLE
	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, pawed trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off froad welnickes appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	1
		Fishing.	0	1
		Trapping of furbearers.	0	1
		None of the above.	1	
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0	
		100-500 m. away.	0	1
		>500 m. away, or no information.	1	1
66	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]
		(calciphiles). Enter 1 If more than two Strong or more than five Moderate calciphile species are present; otherwise enter 0, but if not able to		T · ·

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	Site Identifier: PLW-W-04		ate: 10 September 2020		
essor (S) Data Form for Non-Tidal	Wetlands WESP-AC for New B	runswick Version 2			
Aberrant Timing of Water Inputs	Trottando: WEST AS 101 NOW B	Turiowick. Voloion 2.			
,					
In the last column, place a check mark next to any item that is likely t more temporal homogeneity of flow or water levels) or more flashy (la			mutea (smaller of less frequent peaks spread over longer time:		
Stormwater from impervious surfaces that drains directly to the wetl	and.	-			
Water subsidies from wastewater effluent, septic system leakage, so	now storage areas, or irrigation.				
Regular removal of surface or groundwater for irrigation or other cor	nsumptive use.				
Flow regulation in tributaries or water level regulation in adjoining wa	ater body, or other control structure at water entry points that regu	alates inflow to the wetland.			
A dam, dike, levee, weir, berm, or fill within or downgradient from	the wetland that interferes with surface or subsurface flow in/ou	t of the AA (e.g., road fill, wellpads, pipelines).			
Excavation within the wetland, e.g., dugout, artificial pond, dead-end	d ditch.				
Artificial drains or ditches in or near the wetland.					
Accelerated downcutting or channelization of an adjacent or internal	I channel (incised below the historical water table level).				
Logging within the wetland.					
Subsidence or compaction of the wetland's substrate as a result of r	machinery, livestock, fire, drainage, or off road vehicles.				
Straightening, ditching, dredging, and/or lining of tributary channels. If any items were checked above, then for each row of the table below, assign points. However, if you believe the checked items had no measurable effect on the timing of water conditions in any part of the AA, then leave the "O's" for the scores in the following.					
If any items were checked above, then for each row of the table belo To estimate effects, contrast the current condition with the condition		no measurable effect on the timing of water conditions in any part of	f the AA, then leave the "O's" for the scores in the following rov		
	Severe (3 points)	Medium (2 points)	Mild (1 point)		
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.		
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.		
Score the following 2 rows only if the altered inputs began within pas	, ,	, ,	, , , , , , , , , , , , , , , , , , ,		
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.		
Flashiness or muting:	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.		
			Sum=		
Accelerated Inputs of Contaminants and/or In the last column, place a check mark next to any item — occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow store	n either the welland or its CA that is likely to have accelerated to landfills, industrial facilities.				
In the last column, place a check mark next to any Item occurring in Stormwater or wastewater effluent (including failing septic systems) Metals & chemical wastes from mining, shooting ranges, snow stora npri/default.asp?tang=En&n=B85A1846-1	n either the welland or its CA that is likely to have accelerated to landfills, industrial facilities.		RJ		
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FieldS form Non-tidal 1

	buting Area									
In the last column, place a check mark next to any item present in	n the CA that is likely to have elevated the load of waterborne or wind	borne sediment reaching the wetland from its CA. [FA, FR, INV,	PH, SRv, STR]							
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	ation clearing, fires.									
Erosion from construction, in-channel machinery in the CA.										
Erosion from off-road vehicles in the CA.	Erosion from off-road vehicles in the CA.									
Erosion from livestock or foot traffic in the CA.										
Stormwater or wastewater effluent.										
Sediment from road sanding, gravel mining, other mining, oil/ ga	as extraction.									
Accelerated channel downcutting or headcutting of tributaries do	ue to altered land use.									
Other human-related disturbances within the CA.										
	below, assign points (3, 2, or 1 as shown in header) in the last colum ate effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,							
	Severe (3 points)	Medium (2 points)	Mild (1 point)							
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.							
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.							
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.							
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.							
* high-intensity= extensive off-road vehicle use, plowing, grading	Sum=	0								
soil or sediment.										
soil or sediment. Soil or Sediment Alteration Within the As.	sessment Area		Stressor subscore=							
Soil or Sediment Alteration Within the As:	in the wetland that is likely to have compacted, eroded, or otherwise a	allered the wetland's soil. Consider only items occurring within pa								
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Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is Is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause Artificial water level or flow manipulations sufficient to cause ero. If any items were checked above, then for each row of the table is effects, contrast the current condition with the condition if the che	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants of the pla	ported from another wetland. not measurably alter the soil structure and/or topography, then lea Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any).	st 100 years or since wetland was created or restored (whichever we the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).							
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present is less), [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or more Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of native Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause artificial water level or flow manipulations sufficient to cause error if any items were checked above, then for each row of the table is effects, contrast the current condition with the condition if the checked states of significant soil alteration in wetland: Recentness of significant soil alteration in wetland:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. The plants is a compacted periods. The plants is graphic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. The plants is a compact point in the plants is some content of the plants is some content in the plants in the plants in the plants is some content in the plants in the pla	ported from another wetland. Not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any).	0.00						
Soil or Sediment Alteration Within the As: In the last column, place a check mark next to any item present it is less). [CS, INV, NR, PH, SR, STR] Compaction from machinery, off-road vehicles, livestock, or mot Leveling or other grading not to the natural contour. Tillage, plowing (but excluding disking for enhancement of nativ Fill or riprap, excluding small amounts of upland soils containing Excavation. Ditch cleaning or dredging in or adjacent to the wetland. Boat traffic in or adjacent to the wetland and sufficient to cause erd If any items were checked above, then for each row of the table teffects, contrast the current condition with the condition if the che Spatial extent of altered soil: Recentness of significant soil alteration in wetland: Duration:	In the wetland that is likely to have compacted, eroded, or otherwise a untain bikes, especially during wetter periods. In particular periods, and the particular periods are plants). In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. In organic amendments (compost, etc.) or small amounts of topsoil im shore erosion or stir bottom sediments. It is not to the checked items did recked items never occurred or were no longer present. Severe (3 points) Severe (3 points) Current & ongoing. Long-lasting, minimal veg recovery.	ported from another wetland. not measurably alter the soil structure and/or topography, then lease Medium (2 points) 5-95% of wetland or 5-95% of its upland edge (if any). 1-12 months ago. Long-lasting but mostly revegetated.	ve the "0's" for the scores in the following rows. To estimate Mild (1 point) <5% of wetland and <5% of its upland edge (if any). >1 yr ago. Short-term, revegetated, not intense.							

FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLW-W-04

Date: 10 September 2020

Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.166276, -66.205112

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

computed.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	3.37	Moderate	0.50	Lower	4.33	0.58
Stream Flow Support (SFS)	5.63	Moderate	3.58	Moderate	3.00	2.09
Water Cooling (WC)	0.00	Lower	0.00	Lower	0.00	0.00
Sediment Retention & Stabilisation (SR)	4.80	Moderate	0.37	Lower	6.44	0.22
Phosphorus Retention (PR)	4.68	Higher	0.00	Lower	6.22	0.33
Nitrate Removal & Retention (NR)	1.36	Lower	1.56	Lower	4.67	2.50
Carbon Sequestration (CS)	6.64	Higher			7.43	
Organic Nutrient Export (OE)	6.85	Higher			5.97	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	4.98	Moderate	0.89	Moderate	5.62	1.73
Amphibian & Turtle Habitat (AM)	3.20	Lower	3.16	Moderate	4.99	4.01
Waterbird Feeding Habitat (WBF)	0.00	Lower	0.00	Lower	0.00	0.00
Waterbird Nesting Habitat (WBN)	0.00	Lower	0.00	Lower	0.00	0.00
Songbird, Raptor, & Mammal Habitat (SBM)	6.47	Moderate	6.67	Moderate	5.36	6.67
Pollinator Habitat (POL)	9.42	Higher	6.67	Moderate	7.58	6.67
Native Plant Habitat (PH)	5.78	Moderate	7.53	Higher	5.42	6.54
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			0.30	Lower		2.29
Wetland Ecological Condition (EC)			4.22	Moderate		6.67
Wetland Stressors (STR) (higher score means more stress)			2.11	Lower		3.04
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	5.63	Higher	0.50	Lower	4.33	0.58
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	4.21	Moderate	1.10	Lower	6.81	1.76
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	5.60	Moderate	2.54	Moderate	4.81	1.68
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	1.92	Lower	1.90	Lower	2.99	2.41
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	8.32	Higher	7.24	Higher	6.85	6.65
WETLAND CONDITION (EC)			4.22	Moderate		6.67
WETLAND RISK (average of Sensitivity & Stressors)			1.21	Lower		2.66
	NOTE: A coor	o of 0 doop not	moon the fund	tion or honofit i	e abcont from t	ho watland It

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

Cover Page: Basic Description of Assessment	WESP-AC version 2
Site Name:	Burchill Wind Energy Project - PLW-W-06
Investigator Name:	Derrick Mitchell
Date of Field Assessment:	11 October 2019
Nearest Town:	Lorneville (west Saint John), New Brunswick
Latitude (decimal degrees):	45.166706
Longitude (decimal degrees):	-66.208365
Is a map based on a formal on-site wetland delineation available?	Yes
Approximate size of the Assessment Area (AA, in hectares):	0.61
AA as percent of entire wetland (approx.). Attach sketch map if AA is smaller than the entire contiguous wetland.	
What percent (approx.) of the wetland were you able to visit?	10
What percent (approx.) of the AA were you able to visit?	100
Were you able to ask the site owner/manager about any of the questions?	No
Indicate here if you intentionally surveyed for rare plants, calciphile plants, or rare animals	Yes
Have you attended a WESP-AC training session? If so, indicate approximate month & year	Yes, September 2016
How many wetlands have you assessed previously using WESP-AC? (approx.)	100+
Comments about the site or this WESP-AC assessment (attach extra page if desired):	

Form OF (Office). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Conduct an assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the Q (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answering many of the questions below will equire using these online map viewers:

Google Earth Pro: https://www.google.com/earth/download/gep/agree.html
GeoNB: http://www.snb.ca/geonb1/ and http://www.snb.ca/geonb1/e/apps/apps-E.asp

For most wetlands, completing this office data form will require 1-2 hours. For a list of functions to which each question pertains, see bracketed abbreviations in the Definitions/Explanations column. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

#	Indicators	Condition Choices	Data	Definitions/Explanations
OF1	Province	Mark the province in which the AA is located by changing the 0 in the column next to it to a *1". Mark only one.		This determines to which province's calibration wetlands the raw score of any wetland is normalised. In the function and benefits models, it also triggers the automatic exclusion of indicators for which no
		New Brunswick	- 1	spatial data exists in a particular province.
		Nova Scotia	0	
		Prince Edward Island Newfoundland-Labrador	0	4
OF2	Ponded Area Within 1	The area of surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:	0	"Adjacent" means not separated from the AA by a wide expanse (>50 m) of upland (including roads
	km.	<0.01 hectare (about 10 m x 10 m).	1	>50 m wide). Include ponded areas likely to be hidden by wetland vegetation. If surface water extends beyond 1 km, include only the part within 1 km. Do not include tidal areas. Measure the are:
		0.01 - 0.1 hectare.	0	from aerial imagery using Google Earth Pro (click on Ruler icon in toolbar, then Polygon in pop-up
		0.1 - 1 hectare.	0	menu). With the GeoNB viewer, enable the Wetlands layer, then measure with the Draw & Measure tool after specifying Aerial as the Basemap. However, do not rely entirely on wetland boundaries
		1 to 10 hectares.	0	shown in online wetlands layers. [PH, SBM, WBN]
		10 to 100 hectares.	0	
050	D 1 1W 1 0	>100 hectares.	0	
OF3	Ponded Water & Wetland Within 1 km.	The area of wetlands and surface water ponded during most of the growing season that is both (1) in or adjacent to the AA and (2) within 1 km is:		See definition of adjacent in OF2. If the AA's wetland vegetation extends beyond 1 km, include only the part within 1 km. "Ponded" means not flowing in rivers or streams. [Sens, WBF]
		<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare. 0.1 - 1 hectare.	0	4
		1 to 10 hectares.	1	
		10 to 100 hectares.	0	
		>100 hectares.	0	1
OF4	Size of Largest Nearby Vegetated Tract or	The largest vegetated patch or corridor that includes the AA's vegetation plus all adjacent upland vegetation that is not lawn, row crops, neavily grazed lands, conifer plantation is:		See definition of adjacent in OF2. Use Google Earth Pro's polygon ruler (as described above). Exclude conifer plantations only if it is obvious that trees were planted in rows. [AM, PH, SBM, Sens]
	Corridor	<0.01 hectare (about 10 m x 10 m).	0	
		0.01 - 0.1 hectare.	0	
		0.1 - 1 hectare.	0	
		1 to 10 hectares.	0	4
		10 to 100 hectares. 100 to 1000 hectares.	0	1
		>1000 hectares. [This is nearly always the answer in relatively undeveloped landscapes.]	1	
OF5	Distance to Large Vegetated Tract	The minimum distance from the edge of the AA to the edge of the closest <i>vegetated land</i> (but excluding row crops, lawn, conifer plantation) larger than 375 hectares (about 2 km on a side), is:		To measure distance, use Google Earth Pro (Ruler > Line tool). Or use Draw & Measure tool at GeoNB. The 375-ha criterion is from the Fundy Model Forest Project. [AM, PH, POL, SBM, Sens]
		<50 m, and not separated from the 375-ha vegetated area by any width of paved roads, stretches of open water, row crops, bare ground, lawn, or impervious surface. Or the AA itself contains >375 ha of vegetation. [This is often the answer in relatively undeveloped landscapes.]	1	
		<50 m, but completely separated from the 375-ha vegetated area by those features, and AA does not contain >375 ha of vegetation.	0	
		50-500 m, and not separated.	0	
		50-500 m, but separated by those features.	0	
		0.5 - 5 km, and not separated. 0.5 - 5 km, but separated by those features.	0	4
		None of the above (the closest patches or corridors which are that large are >5 km away).	0	1
OF6	Herbaceous Uniqueness	The AA's vegetation cover is >10% herbaceous" but uplands within 5 km have <10% herbaceous cover. If so, enter "3" and continue to	2	For this question only, consider moss to be herbaceous vegetation. Determine the score by viewing
		OF7. If not, consider:		aerial imagery in Google Earth after successively drawing or estimating the boundaries of the buffers of 5 km, 1 km, and 100 m radius focused on the center of the AA. Circles of specified radius can be
		The AA's vegetation cover is >10% herbaceous* but uplands within 1 km have <10% herbaceous cover. If so enter "2" and continue to 0F7. If not, consider: The AA's vegetation cover is >10% herbaceous* but uplands within 100 m of the wetland edge have <10% herbaceous cover. If so, enter		of sixty, Tixty, and too intradus toolsed on the center of the AAC Circles of specified radius can be drawn in Google Earth Pro by clicking on the Ruler icon, then Circle in the pop-up menu. [AMv, PHv, PDLv, SBMv, WBFv, WBNv]
		"1". NOTE: Exclude lawns, row crops, heavily grazed lands, forest, shrublands. Include moss as well as grassilike plants in this use of		. 527,55117,115.17,115.11
057	18/	"herbaceous vegetation"]	2	Construction of the state of th
OF7	Woody Uniqueness	The AA's vegetation cover is >10% woody" but uplands within 5 km have <10% woody cover. If so, enter "3" and continue to OF8. If not, consider: The AA's vegetation is >10% woody" but uplands within 1 km have <10% woody cover. If so enter "2" and continue to OF8. If not,	2	See above. Do not consider conifer plantations to be forest if it is obvious that trees were planted in rows. [AMv, PHv, POLv, SBMv]
		The AA's vegetation is >10% woody* but uplands within 100 m of the wetland edge have <10% woody cover. If so, enter "1"		
		[* NOTE: woody cover = trees & shrubs taller than 1 m.]		
OF8	Local Vegetated Cover Percentage	Draw a 5-km radius circle measured from the center of the AA. Ignoring all permanent water in the circle, the percent of the remaining area that is wooded or unmanaged herbaceous vegetation (NOT lawn, row crops, bare or heavily grazed land, clearcuts, or conifer plantations) is:		In Google Earth, draw the 5 km buffer and then estimate land cover percentages, or do GIS analysis of an appropriate land cover layer. [AM, PH, POL, SBM, Sens]
		<5% of the land.	0]
		5 to 20% of the land. 20 to 60% of the land.	0	-
		20 to 60% or the land. 60 to 90% of the land.	0	1
		>90% of the land. SKIP to OF10.	1	1
OF9	Type of Land Cover	Within the 5-km radius circle, and ignoring all permanent water, the land area that is bare or non-perennial cover is mostly:		[AM, SBM]
	Alteration	Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	1
		Bare pervious surface, e.g., lawn, recent (<5 yrs ago) clearcut, dirt or gravel road, cropland, landslide, conifer plantation.	0	1
OF10	Distance by Road to	Measured along the maintained road nearest the AA, the distance to the nearest population center is:		"Population center" means a settled area with more than about 5 regularly- inhabited structures per
	Nearest Population Center	<100 m.	0	square kilometer. In Google Earth, click on the Ruler icon, then Path, and draw and measure the route. Or use the GeoNB's Draw & Measure tool> Freehand Line to draw and measure the route to
		100 - 500 m.	0	Settlements (click on Place Names in menu) or other areas not close to mapped settlements but
		0.5- 1 km.	0	which meet the criteria.[FAv, FRv, NRv, PH, PU, SBM, WBFv]
		1 - 5 km.	1	
		>5 km.	0	1

OF11	Distance to Nearest	From the center of the AA, the distance to the nearest maintained public road (dirt or paved) is:	1	Determine this by viewing aerial imagery in Google Earth and measuring with the Ruler>Line tool. Or
OI II	Maintained Road	r r r	0	use the GeoNB's Draw Line tool. [AM, FAv, FRv, NRv, PH, PU, SBM, STR, WBN]
		<10 m. 10 - 25 m.	0	
		25 - 50 m.	0	
		50 - 100 m.	0	
		100 - 500 m.	1	
OF12	Wildlife Access	>500 m.	0	In NID, anable the Metlands laws in CookID (despite its emissions) to show surrounding wetlands and
UF12	wilding Access	Draw a circle of radius of 5 km from the center of the AA. If mammals and amphibians can move from the center of the AA to ALL other separate wetlands and ponds located within the circle without being forced to cross pavement (any width), tawns, bare ground, and/or marrie waters, mark 1 = yes can move to all, 0 = no. Change to blank if there are no other wetlands within 5 km.	0	In NB, enable the Wetlands layer in GeoNB (despite its omissions) to show surrounding wetlands and roads, while estimating the location of the 5 km circle (or draw the 5 km circle in Google Earth Pro using the Circle tool and compane). Evaluate using Google Earth, being cautious to search for roads hidden under forest canopy. [AM, SBM, STR]
OF13	Distance to Ponded	The distance from the AA center to the closest (but separate) ponded water body visible in GoogleEarth imagery is:		In Google Earth, zoom in closely to examine the surrounding landscape for ponds, lakes, and
	Water	<50 m, and not separated by any width of paved roads, stretches of open water, row crops, lawn, bare ground, or impervious surface.	0	wellands that appear to be permanently flooded. Enable the GeoNB viewer's Wetlands layer as well. [AM, PH, SBM, Sens, WBF, WBN]
		<50 m, but completely separated by those features.	0	
		50-500 m, and not separated. 50-500 m, but separated by those features.	0	
		0.5 - 1 km, and not separated.	0	
		0.5 - 1 km, but separated by those features.	0	
		None of the above (the closest patches or corridors that large are >1 km away).	0	
OF14	Distance to Large Ponded Water	The distance from the AA center to the closest (but separate) non-lidal body of water that is ponded during most of the year and is larger than 8 hectares during most of a normal year is: -100 m.	0	Determine this by viewing aerial imagery in Google Earth. [Sens, WBF, WBN]
		100 m - 1 km.	0	
		1-2 km.	0	
		2-5 km.	1	
		5-10 km.	0	
0545	T. I. I. D	>10 km.	0	
UF15	Tidal Proximity	The distance from the AA edge to the closest tidal water body (regardless of its salinity) is:		In Google Earth, measure the distance to the ocean (including Bay of Fundy) or tidal river, whichever is closer. If you need to see how far upriver a river is tidal, see the KMZ file provided with this
		<100 m.	0	calculator for NB (NB Headtide). Points shown in those files are only an approximation, so local
		100 m - 1 km.	0	information if available may be preferable. [FA, WBF]
		1 - 5 km. 5-10 km.	0	
		10-40 km.	0	
		>40 km.	0	
OF16	Upland Edge Contact	Select one: The AA has no upland edge (or upland is <1% of perimeter). The AA is entirely surrounded by (& contiguous with) other wetlands or water.	0	[NR, SBM, Sens]
		1-25% of the AA's perimeter abuts upland (including filled areas). The rest adjoins other wellands or water that is mostly wider than the AA.	0	
		25-50% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		50-75% of the AA's perimeter abuts upland. The rest adjoins other wetlands or water that is mostly wider than the AA.	0	
		More than 75% of the AA's perimeter abuts upland. Any remainder adjoins other wetlands or water that is mostly wider than the AA. This will be true for most assessments done with WESP-AC.	1	
OF17		Within 5 km downstream or downslope of the AA (select first true choice):		In the GeoNB map viewer: click on "More" in upper right, then "Flood Information". Expand the menu
	tidal Waters	Maps show Flood Zone or Flood Risk areas and there appears to be infrastructure vulnerable to river flooding not caused by tidal storm surges.	0	under it by clicking on the arrow to its left and the slider to its right. Uncheck the first (Limits of Data) box. Where available, LIDAR imagery can provide finer elevational resolution useful for flood modeling, [WSv]
		Maps show Flood Zone or Flood Risk areas, but infrastructure is absent or is not vulnerable to floods from a non-tidal river. In some cases levees, upriver dams, or other measures may partly limit damage or risk from smaller events.	0	
		Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there appears to be infrastructure vulnerable to river flooding unrelated to tidal storm surges. Maps do not show Flood Zone or Flood Risk areas (or no such mapping has been done locally) and there is no infrastructure vulnerable	0	
OF18	Relative Elevation in	to river flooding unrelated to tidal storm surges. In Google Earth, enable the Terrain layer (tower left menu) and open the NB_Watersheds KMZ file that accompanies this calculator. Then		[FA, NR, Sens, SFSv, WCv, WSv]
	Watershed	determine the AA's approximate elevation (hottom right, NOT the "eye alt"). Then move cursor around to determine the watershed's maximum and minimum elevation. Divide the AA's elevation by the (max-min).	0.23	
	Water Quality Sensitive Watershed or Area	In Google Earth, open the KMZ file NB_Watershed Protected Area which accompanies this calculator. The AA is within such an area. Enter 1= yes, 0= no.	0	If an ACCDC report is available for this AA, it also may contain such information. [NRv]
OF20	Degraded Water Upstream	Sampling indicates a problem with concentrations of metals, hydrocarbons, nutrients, or other substances (excluding bacteria, acidic water, high temperatures) being present at levels harmful to aquatic life or humans, and:		May use existing data, or sample those waters as part of this wetland assessment. "Harmful" should be evaluated with regard to current federal or provincial water quality standards. [AM, FA, FR, NRv,
		The condition is present within the AA.	0	PRv, SRv, STR, WBF, WBN]
		The condition is present in waters within 1 km that flow into the AA, but has not been documented in the AA itself.	0	
		Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters.	0	
		Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region.	1	
OFo:	Degraded Water	The problem described above is downslope from the AA, and:		May use existing data, or monitor waters as part of this wetland assessment. [NRv, PRv, SRv]
OF21				
OF21	Downstream	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a	0	
OF21		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing		
OF21		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel.	0	
		The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly	0	Topographic maps may be viewed online at the National Atlas of Canada (Toporama): http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
	Downstream Wetland as a % of its Contributing Area	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result its: -0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0 0 1 1 0 0	
	Downstream Wetland as a % of its Contributing Area	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, andlor using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland's area. The result is:	0	
	Downstream Wetland as a % of its Contributing Area	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. Data are insufficient (no or inadequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland's area. The result is: 4.001, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area.	0 0 0 0 0 1	
OF22	Downstream Wetland as a % of its Contributing Area (Catchment)	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel. Sampling during both low water periods and times with high runoff (storms, snowmelt) indicates no problems in either the AA or inflowing waters. To all veltands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which the AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or by using procedures described in the Manual. Divide the area of the wetland foll just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetland's area. The result is: <0.01, or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised bog).	0 0 1 1 0 0	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]
OF22	Downstream Wetland as a % of its Contributing Area	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel or present in either the AA or present in either the AA or present in either the AA or present in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which he AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland liseff. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result is: <0.01, or calchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. >1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised	0 0 0 0 0 1	
OF22	Downstream Wetland as a % of its Contributing Area (Calchment)	The condition is present within 1 km downslope and connected to the AA by a channel. The condition is present within 5 km downslope and connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel, or within 1 km but not connected to the AA by a channel or within 1 km but not connected to the AA by a channel or within 1 km but not connected to the AA by a by a channel or indequate sampling within 1 km, or condition exists only at >1 km upstream). This is the situation for nearly all wetlands in this region. From a topographic map and field observations, estimate the approximate boundaries of the catchment (CA) of the entire wetland of which AA may be only a part. Then adjust those boundaries if necessary based on your field observations of the surrounding terrain, and/or by using procedures described in the Manual. Divide the area of the wetland (not just the AA) by the approximate area of its catchment excluding the area of the wetland itself. When doing the calculation, if ponded water is adjacent to the wetland, include that in the wetlands area. The result is: = 0.01 or catchment size unknown due to stormwater pipes that collect water from an indeterminate area. 0.01 to 0.1. > 1 (wetland is larger than its catchment (e.g., wetland with flat surrounding terrain and no inlet, or is entirely isolated by dikes, or is a raised toog). The proportion of the AA's contributing area (measured to no more than 1000 m upstope) that is comprised of buildings, roads, parking lots, other pavement, exposed bedrock, landslides, and other mostly-bare surface is about:	0 0 0 0 0 1	http://atlas.gc.ca/toporama/en/index.html [NR, PR, Sens, SR, WS]

		_		
OF24	Transport From Upslope	A relatively large proportion of the precipitation that falls farther upslope in the CA reaches this wetland quickly as runoff (surface water), as		[NRv, PRv, SRv, WSv]
		indicated by the following:		
		(a) input channel is present,		
		(b) input channels have been straightened,		
		(c) upslope wetlands have been ditched extensively,		
		(d) land cover is mostly non-forest,		
		(e) CA slopes are steep, and/or		
		(f) most CA soils are shallow (bedrock near surface) and/or have high runoff coefficients.		
		This statement is:		
		Mostly true.	0	
		Somewhat true.	0	
		Mostly untrue.	1	
OF25	Aspect	The overland flow direction of most surface water (in streams, rivers, or runoff) that enters the AA is:		[AM, NR, SFS, WC, WS]
				(· · · · · · · · · · · · · · · · · · ·
		Northward (N, NE). north-facing contributing area.	0	
		Southward (S, SW). south-facing contributing area.	- 1	
		Other (E, SE, W, NW), or no detectable uphill slope or input channel (flat).		
OF26	Internal Flow Distance	The horizontal flow distance from the wetland's inlet to outlet is:		Identify inlets and outlets, if any, from topographic maps (use elevations to determine which are inlets
0120	(Path Length)			and which are outlets) and augment by field inspection. [NR, OE, PR, SR, WS]
	(<10 m.	0	
		10 - 50 m.	0	1
		50 - 100 m.	0	
		100 - 1000 m.	1	
		1- 2 km.	0	
				1
		>2 km, or wetland lacks an inlet and outlet.	0	
OF27	Growing Degree Days	In Google Earth, open the KMZ file that accompanies this calculator, called NB-PEI_GrowingDegreeDays. Place your cursor over the AA	2428	This layer was provided by Dr. Dan McKenney of the Canadian Forest Service [AM, CS, FR, INV,
		and left-click. From the pop-up, enter the GRIDCODE in the next column.	2428	NR, OE, PH, PR, Sens, SR, WBF, WCv, WS]
OF28	Fish Access or Use	According to agency biologists and/or your own observations, the AA. [Mark just the first choice that is true.]:		Regarding the last choice, if uncertain if an AA is fishless, consider the possibility its waters have been
				stocked. In NB, the list of stocked waters is at:
		Is known to support rearing and/or spawning by Atlantic salmon or other anadromous species or eels. In NB, consult Figure A-2 in	0	http://www2.gnb.ca/content/gnb/en/departments/erd/natural_resources/content/fish/content/StockedW
		Appendix A of the Manual. Contact local fishery biologists, review the ACCDC report, and visit these websites:		aters.html
		http://www.salmonatlas.com/atlanticsalmon/canada-east/index.1.html http://atlanticsalmonfederation.org/rivers/introduction.html		[AM, FA, FR, INV, WBF, WBN]
		Has not been documented to support Atlantic salmon rearing and/or spawning, but is connected to nearby waters likely to contain Atlantic	0	
		salmon or other anadromous species or eels and is probably accessed by those during some conditions.		
		Is probably is not accessed by any anadromous fish species but is known or likely to have other fish at least seasonally.	0	i
		Is known or likely to be fishless (e.g., too small, dry, and/or not accessible even temporarily, and not stocked).	1	
0500	0 1 10 11			D 117 1 7 100D0 11 1 1
OF29	Species of Conservation	Within the past 10 years, in the AA (or in its adjoining waters or wetland), qualified observers have documented [mark all applicable]:		Request information from ACCDC and/or conduct your own survey at an appropriate season using an
	Concern			approved protocol. For birds, also check eBird.org. [AMv, EC, PHv, POLv, SBMv, Sens, WBFv,
		Presence of one or more of the plant species listed in the Plants_Rare worksheet of the accompanying Supplnfo file, or the AA is within a	0	WBNv]
		mapped Atlantic Coastal Plain Flora Buffer		
		Presence of one or more of the amphibian or reptile species (AM) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
			U	
		accompanying Supplnfo file.		
		Presence of one or more of the waterbird species (WBF, WBN) of conservation concern as listed in the Wildlife_Rare worksheet of the	0	
		accompanying SuppInfo file.		
		Presence of one or more of the nesting songbird or raptor species (SBM) of conservation concern as listed in the Wildlife_Rare worksheet	0	
		of the accompanying Supplnfo file, during their nesting season (May-July for most species).		
		None of the above, or no data.	1	
OF30	Important Bird Area	In Google Earth, open the KMZ file that accompanies this calculator, called IBAs_Canada. The AA is all or part of an officially designated	0	The source of this layer, which should be checked periodically for updates, is:
	(IBA)	IBA. Enter 1= yes, 0= no.		http://www.ibacanada.com/mapviewer.jsp?lang=EN [SBMv, WBFv, WBNv]
OF31	Black Duck Nesting Area	In Google Earth, open the KMZ file that accompanies this calculator, called BlackDuck. Adjust its alignment and opacity. Determine the	0	This was provided by Dr. David Leske. [WBNv]
		predicted density (pairs per 25 sq. km) of nesting American Black Duck in the AA's vicinity: <10 (enter 0), 10-20 (enter 1), 20-30 (enter 2),		
		>30 (enter 3). If outside of region shown in map, change to blank .		
05			<u> </u>	(cp.)
OF32	Wintering Deer or Moose	If AA is on private land with no information, change to blank (not 0). If on public/crown land, in Google Earth open the KMZ file that	0	[SBM]
	Concentration Areas	accompanies this report called NB_DeerWinteringAreas.Otherwise: Enter: yes= 1, no= 0.		
OF33	Other Conservation	With GeoNB, click on Candidate PNA Map Viewer to identify Provincially Significant Wetland, Environmentally Significant Area, Protected	0	[PU]
	Designation	Natural Area but also include if the AA is all or part of an area designated by government, First Nations, or the Nature Conservancy of	l	
		Canada (NCC) for its exceptional ecological features or highly intact natural conditions. Enter: yes= 1, no= 0. If uncertain, consult NCC and		
		agencies for more recent information.		
OF34	Concordation Investment		0	
UF 34	Conservation Investment	The AA is part of or contiguous to a welland on which public or private organizational funds were spent to preserve, create, restore, or enhance the welland (excluding mitigation wetlands). Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank (not	U	[PU]
		remainse me wenana (excluding minganon wenanus). Ask me property owner. Enter: yes= 1, no= 0. If no information, change to blank (not n)		
		U).		
OF35	Mitigation Investment	The AA is all or part of a mitigation site used explicitly to offset impacts elsewhere. Ask the property owner. Enter: yes= 1, no= 0. If no	0	[PU]
		information, change to blank .	<u> </u>	
OF36	Sustained Scientific Use	Plants, animals, or water in the AA have been monitored for >2 years, unrelated to any regulatory requirements, and data are available to	0	[PU]
		the public. Or the AA is part of an area that has been designated by an agency or institution as a benchmark, reference, or status-trends		
		monitoring area. Ask the property owner. Enter: yes= 1, no= 0. If no information, change to blank.		
0527	Calcaronus Posion	The AA is in an area that is at least partly underlain by sail codiment, or hedrock that is highly colors are Anter 2 in and a factor.	Δ.	If GIS is available, you may use the Bedrock Geology shapefile obtainable at
UF37	Calcareous Region	The AA is in an area that is at least partly underlain by soil, sediment, or bedrock that is highly calcareous (enter 3 in next column),	0	
		moderately calcareous (enter 2), or slightly calcareous (enter 1), none= 0. Limestone is typically a major component (karst geology) and		http://www.snb.ca/geonb1/e/DC/catalogue-E.asp [AM, FA, FR, INV, PH]
		water is not acidic (pH is usually >8). See Figure A-6 in Appendix A of the Manual. If no map coverage, change to blank.		
OF38	Ownership	Select the ONE ownership that covers the most of the AA. In Google Earth, open KMZ file called NB Crown lands. Use more recent		"Private lands" may include those owned or leased by non-governmental organizations, e.g.,
		information if available.		charitable conservation land trusts, DUC, TNC. [PU, STR]
			^	
		New timber harvest, roads, mineral extraction, and intensive summer recreation (e.g., off-road vehicles) are permanently prohibited.	0	
		Includes many publicly-owned Protected Lands, and private lands under long-term (30+ year) legal agreements to maintain nearly-unaltered		
		conditions.	4	
		Ownership is public (e.g., municipal, Crown Reservations/Notations) but some or all of the above activities are allowed.		
		Ownership is private but public access is allowed, and/or a shorter-term conservation easement (whether renewable or not) is in place.	0	
			<u> </u>	
		Ownership is private and owner does not allow access, or access permission unknown, and not a conservation easement.	0	

Date: 11 October 2019 Site Identifier: PLW-W-06 Investigator: Derrick Mitch

Form F (Field). Non-tidal Wetland Data Form. WESP-AC version 2 for New Brunswick wetlands only. DIRECTIONS: Walk for no less than 10 minutes from the wetland edge towards its core, in the part of the AA that is proposed for alteration. If no alteration is proposed, walk in a portion that appears to be most representative of the wetland overall. Walk only where it is safe and legal to do so. Conduct the assessment only after reading the accompanying Manual and the Explanations column of the data form. In the Data column, change the 0 (false) to a 1 (true) for the best choice, or for multiple choices where allowed and so indicated. Answer these questions primarily based on your onsite observations and interpretations. Do not write in shaded parts of this data form. Answering some questions accurately may require conferring with the landowner or other knowledgable persons and/or reviewing aerial imagery. For most wetlands, completing this field data form will require 1-2 hours on a site. For a list of functions to which each question pertains, see the accompanying Interpretations form. For detailed descriptions of each WESP-AC model, see Appendix B of the accompanying Manual. Codes for functions and values are: WS= Water Storage & Delay, SFS= Stream Flow Support, WC= Water Cooling, SR= Sediment Retention & Stabilisation, PR= Phosphorus Retention, NR= Nitrate Removal, CS= Carbon Sequestration, OE= Organic Nutrient Export, INV= Invertebrate Habitat, FA= Anadromous Fish Habitat, FR= Resident Fish Habitat, AM= Amphibian & Reptile Habitat, WBF= Feeding Waterbird Habitat, WBN= Nesting Waterbird Habitat, SBM= Songbird, Raptor, & Mammal Habitat, POL= Pollinator Habitat, PH= Native Plant Habitat, PU= Public Use & Recognition, EC= Ecological Condition, Sen= Wetland Sensitivity, STR= Stressors.

				0.000 5.000
#	Indicators	Condition Choices	Data	Definitions/Explanations
1	Wetland Type	Follow the key below and mark the ONE row that best describes MOST of the vegetated part of the AA:		Ericaceous shrubs are ones in the heather family (Ericaceae). Most have leathery evergreen leaves. They include rhododendron, azalea, swamp laurel, leatherleaf, Labrador tea, and others. Most require
		A. Moss and/or lichen cover more than 25% of the ground. Often dominated by ericaceous shrubs (e.g., Labrador tea) or other acid-tolerant plants (e.g., bog cranberry, pitcher plant, sundew, orchids). Substrate is mostly undecomposed peat. Choose between A1 and A2 and mark the choice with a 1 in their adjoining column. Otherwise go to 8 below.		acidic soil. Although not in the family Ericaceae, sweetgale (<i>Myrica gale</i>) should be counted also. [AM, CS, FA, FR, INV, NR, OE, PH, Sens, SFS, WBF, WBN]
		A1. Surface water is usually absent or, if present, pH is typically <4.5 and conductivity is usually <100 µSicm (<64 ppm TDS). Trees are absent or nearly so. Sedge cover usually sparse or absent but cottongrass and/or lichen cover may be extensive, as well as cloudberry, lingonberry, sheep laurel, and a sedge (Carex rarillora). Wetland surface and surrounding landscape are seldom sloping and wetland often is domed (convex). Inlet and outlet channels are usually absent. If known, pH of peat is <4.0.	0	
		A2. Not A1. Surface water, if present, has pH typically >4.5 and conductivity is usually >100 µS/cm (>64 ppm TDS). Sedge cover is usually extensive, and/or tree and tall shrub cover is extensive. Sometimes at toe of slope or edge of water body. An exit channel is usually present. Wetter than A1 and peat depth may be shallower (<2 m).	1	
		B. Moss and/or lichen cover less than 25% of the ground. Soil is mineral or decomposed organic (muck). Choose between B1 and B2 and mark the choice with a 1 in their adjoining column:		
		B1. Trees and shrubs taller than 1 m comprise more than 25% of the vegetated cover. Surface water is mostly absent or inundates the vegetation only seasonally (e.g., vernal pools or floodplain).	0	
		B2. Not B1. Tree & tall shrubs comprise less than than 25% of the vegetated cover. Vegetation is mostly herbaceous, e.g., catrail, bulrush, burreed, pond lily, horsetail. Surface water may be extensive and fluctuates seasonally, being either persistent or drying up partly or entirely.	0	
		the AA should include all persistent waters in ponds smaller than 8 hectares (-283 m on a side) that are adjacent to the AA. The		
nclud ' adja descn	e the open water part ad cent " is used synonymo bed features along their	the water area of adjacent ponded water larger than 8 ha and adjacent rivers wider than 20 m. Specifically, the AA should jacent to wetland vegetation and equal in width to the average width of that vegetated zone. Throughout this data form, usty with abutting, adjoining, bordering, configuous and means no upland (manmade or natural) completely separates the directly shared edge. Features joined only by a channel are not necessarily considered to be adjacent a large portion of their res do not have to be hydrologically connected in order to be considered adjacent.		
2	Wetland Types - Adjoining or Subordinate	If the AA is smaller than 1 ha, mark all other types that occupy more than 1% of the vegetated AA. If the AA is larger than 1 ha, mark all other types which are within or adjacent to the AA and occupy more than 1 ha, as visible from the AA or as interpreted from aerial imagery. Do not mark again the type marked in F1.		1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, INV, SBM, WBF]
		A1.	0	
		A2. B1.	0	
		B2.	0	
3	Woody Height & Form Diversity	Following EACH row below, indicate with a number code the percentage of the living vegetation in the AA which is occupied by that feature (6 if >95%, 5 if 75-95%, 4 if 50-75%, 3 if 25-50%, 2 if 5-25%, 1 if <5%, 0 if none). If the vegetated part of the AA is largely herbaceous (non-woody) vegetation, these percentages should not sum to 100%.		Deciduous shrubs in this region usually include buttonbush, Labrador tea, bayberry (Morella), huckleberry, cranberry, Coudberry, sweetgale, alder, willow, birch, ash, dogwood, and a few others. If you assigned a code of 3 or higher to any of the first four choices and the ground cover beneath the trees/shrubs is <25% moss, then question F1 might be "B1". [CS, INV, NR, PH, POL, SBM, Sens]
		coniferous trees (may include tamarack) taller than 3 m. deciduous trees taller than 3 m.	3	accessinates to second mostly monitoring accessing control of the
		coniferous or ericaceous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		deciduous shrubs or trees 1-3 m tall not directly below the canopy of trees.	2	
		coniferous or ericaceous shrubs <1 m tall not directly below the canopy of taller vegetation. deciduous shrubs or trees <1 m tall (e.g., deciduous seedlings) not directly below the canopy of taller vegetation.	4	
<u>Vote</u> :	If none of top 4 rows in	F3 was marked 2 or greater , SKIP to F9 (N fixers).		
4	Dominance of Most Abundant Shrub	Determine which two woody plant species comprise the greatest portion of the low (<3 m) woody cover . Then choose one:		[PH, POL, SBM, Sens]
	Species	those species together comprise > 50% of such cover.	0	
5	Woody Diameter	those species together do not comprise > 50% of such cover. Mark ALL the types that comprise >5% of the woody canopy cover in the AA or >5% of the wooded areas (if any) along its upland edge		Estimate the diameters at chest height. If small-diameter trees are overlopped (shaded) by larger
	Classes	(perimeter). The edge should include only the trees whose canopies extend into the AA. coniferous, 1-9 cm diameter and >1 m tall.	- 1	ones, visualise a "subcanopy" at the average height of the smaller-dbh trees, to serve as a basis for th minimum 5% canopy requirement in this question. The trees and shrubs need not be wetland species.
		broad-leaved deciduous 1-9 cm diameter and >1 m tall.	1	[AM, CS, POL, SBM, Sens, WBN]
		coniferous, 10-19 cm diameter.	1	
		broad-leaved deciduous 10-19 cm diameter. coniferous, 20-40 cm diameter.	1	
		broad-leaved deciduous 20-40 cm diameter.	1	
		coniferous, >40 cm diameter. broad-leaved deciduous >40 cm diameter.	0	
		broad-leaved decidadus >40 citi dianietei.	U	[AM, INV, NR, PH, SBM, Sens]
6	Height Class	Follow the key below and mark the ONE row that best describes MOST of the AA:		
6	Height Class Interspersion	Follow the key below and mark the ONE row that best describes MOST of the AA: A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.		
6		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA.	0	
6		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below.	0	
6		A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size		
77	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absence. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that ar
7	Interspersion	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent.	0	
7	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B1 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that an
7	Interspersion Large Snags (Dead Standing Trees)	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. The number of large snags (diameter >20 cm) in the AA plus adjacent upland area within 10 m of the wetland edge is: None, or fewer than B/ hectare which exceed this diameter. Several (>8hectare) and a pond, take, or slow-flowing water wider than 10 m is within 1 km. Several (>8hectare) but above not true.	0 0 1	Snags are dead standing Irees that often (not always) lack bark and foliage. Include only ones that are at least 2 m tall. [POL, SBM, WBN]
77	Interspersion Large Snags (Dead	A. Neither the vegetation taller than 1 m nor the vegetation shorter than that comprise >70% of the vegetated part of the AA. They each comprise 30-70%. Choose between A1 and A2 and mark the choice with a 1 in the adjoining column. Otherwise go to B below. A1. The two height classes are mostly scattered and intermixed throughout the AA. A2. Not A1. The two height classes are mostly in separate zones or bands, or in proportionately large clumps. B. Either the vegetation shorter than 1 m comprises >70% of the vegetated part of the AA, or the vegetation taller than that does. One size class might even be totally absent. Choose between B1 and B2 and mark the choice with a 1 in the adjoining column: B1. The less prevalent height class is mostly scattered and intermixed within the prevalent one, in separate zones or clumps, or is completely absent. B2. Not B1. The less prevalent height class is mostly located apart from the prevalent one, in separate zones or clumps, or is completely absent. None, or fewer than B1 hectare which exceed this diameter. Several (>8/hectare) and a pond, lake, or slow-flowing water wider than 10 m is within 1 km.	0 0 1	Snags are dead standing trees that often (not always) lack bark and foliage. Include only ones that are

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FO	N Fixers	The percentage of the AA's vegetated cover that contains nitrogen-fixing plants (e.g., alder, sweetgale, clover, lupine, alfalfa, other legumes)		Do not include N-fixing algae or lichens. [FA, FR, INV, NRv, OE, PH, SBM, Sens]
1 7	IN FIXEIS	is:		DO NOT INCIDUDE NYINKING BIGGE OF INCIDENS. [FA, FR, NVV, NVV, OE, FT, SDW, SENS]
		<1% or none.	0	
		1-25% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		25-50% of the vegetated cover, in the AA or along its water edge (whichever has more). 50-75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
		>75% of the vegetated cover, in the AA or along its water edge (whichever has more).	0	
F10	Sphagnum Moss	The cover of Sphagnum moss (or any moss that forms a dense cushion many centimeters thick), including the moss obscured by taller		Exclude moss growing on trees and rocks. [CS, PH]
	Extent	sedges and other plants rooted in it, is:		
		<5% of the vegetated part of the AA.	0	
		5-25% of the vegetated part of the AA. 25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	0	
		>95% of the vegetated part of the AA.	0	
F11	% Bare Ground &	Consider the parts of the AA that lack surface water at the driest time of the growing season. Viewed from directly above the ground layer, the		Thatch is dead plant material (stems, leaves) resting on the ground surface. Bare ground that is
	Thatch	predominant condition in those areas at that time is:		present under a tree or shrub canopy should be counted. Boulders count as bare ground. Wetlands with mineral soils and that are heavily shaded or are dominated by annual plant species tend to have
		Little or no (<5%) bare ground is visible between erect stems or under canopy anywhere in the vegetated AA. Ground is extensively blanketed by dense thatch, moss, lichens, graminoids with great stem densities, or plants with ground-hugging foliage.	1	more extensive areas that are bare during the early growing season. [AM, EC, INV, NR, OE, POL, PR, SBM, Sens]
		Slightly bare ground (5-20% bare between plants) is visible in places, but those areas comprise less than 5% of the unflooded parts of the	0	
		Much bare ground (20-50% bare between plants) is visible in places, and those areas comprise more than 5% of the unflooded parts of the	0	
		AA. Other conditions.	0	
		Not applicable. Surface water (either open or obscured by emergent plants) covers all of the AA all the time.	0	
F12	Ground Irregularity	Imagine the AA without any living vegetation. Excluding the portion of the AA that is always under water, the number of hummocks, small pits,		The depressions may be of human or natural origin. [AM, EC, INV, NR, PH, POL, PR, SBM, SR, WS]
		raised mounds, animal burrows, ruts, gullies, natural levees, microdepressions, and other areas of peat or mineral soil that are raised or depressed >10 cm compared to most of the area within a few meters surrounding them is:		
		Few or none (minimal microtopography; <1% of the land has such features, or entire AA is always water-covered).	1	
		Intermediate.	0	
F12	Haland Incl.	Several (extensive micro-topography).	0	TAM ND CDM
F13	Upland Inclusions	Within the AA, inclusions of upland are:		[AM, NR, SBM]
		Few or none.	1	
		Intermediate (1 - 10% of vegetated part of the AA). Many (e.g., wetland-upland "mosaic", >10% of the vegetated AA).	0	1
F14	Soil Texture	In parts of the AA that lack persistent water, the texture of soil in the uppermost layer is mostly: [To determine this, use a trowel to check in at	0	[CS, NR, OE, PH, PR, Sens, SFS, WS]
		least 3 widely spaced locations, and use the soil texture key (in Appendix A of the Manual).]		, , , ,, ,
		Loamy: soils that may contain a little fine grit and do not make a "ribbon" longer than 2 cm when moistened, rolled, squeezed, and extended	0	
		between thumb and forefinger. Finest includes all along till solls that make a ribben longer than 3 cm when maintened, relied, squeezed, and extended between thumb and	1	
		Fines: includes silt, clay, silt, soils that make a ribbon longer than 2 cm when moistened, rolled, squeezed, and extended between thumb and forefinger.		
		Deep Peat, to 40 cm depth or greater.	0	
		Shallow Peat or organic < 40 cm deep.	0	
		Coarse: includes sand, loamy sand, gravel, cobble, soils that do not make a ribbon when moistened, rolled, squeezed, and extended between thumb and forefinger.	0	
F15	Shorebird Feeding	During any 2 consecutive weeks of the growing season, the extent of mudflats, bare unshaded saturated areas not covered by thatch, and		This addresses needs of many but not all migratory sandpipers, plovers, and related species. [WBF]
	Habitats	unshaded waters shallower than 6 cm is: [Include also any area that is adjacent to the AA.]		
		None, or <100 sq. m.	1	
		100-1000 sq. m.	0	
		1000 – 10,000 sq. m. >10,000 sq. m.	0	
F16	Herbaceous % of	In aerial ("ducks eye") view, the maximum annual cover of herbaceous vegetation (all non-woody plants except moss) is:		[AM, WBF, WBN]
	Vegetated Wetland	<5% of the vegetated part of the AA or <0.01 hectare (whichever is less). Mark "1" here and SKIP to F20 (Invasive Plant Cover).	0	
		5-25% of the vegetated part of the AA.	0	
		25-50% of the vegetated part of the AA.	0	
		50-95% of the vegetated part of the AA.	1	
F17	Forh Cours	>95% of the vegetated part of the AA. Within parts of the AA having harbogonus gover (evaluting SAA), the areal cover of forthe reaches an annual maximum of	0	Forths are flowering plants. Do not include process, codess, codes detail other graminoids forms hornatails.
FIZ	Forb Cover	Within parts of the AA having herbaceous cover (excluding SAV), the areal cover of forbs reaches an annual maximum of:		Forbs are flowering plants. Do not include grasses, sedges, cattail, other graminoids, ferns, horsetails, or others that lack showy flowers. [POL]
		<5% of the herbaceous part of the AA. 5-25% of the herbaceous part of the AA.	0	
		25-50% of the herbaceous part of the AA.	1	
		50-95% of the herbaceous part of the AA.	0	1
		>95% of the herbaceous part of the AA.	0	
F18	Sedge Cover	Sedges (Carex spp.) and cottongrass (Eriophorum spp.) occupy:		[CS]
		<5% of the vegelated area, or none.	0	
		5-50% of the vegetated area.	1	
		50-95% of the vegetated area. >95% of the vegetated area.	0	1
F19	Dominance of Most	Determine which two herbaceous species comprise the greatest portion of the herbaceous cover (excluding mosses and floating-leaved	Ů	For this question, include ferns as well as graminoids and forbs. [EC, INV, PH, POL, Sens]
	Abundant Herbaceous	aquatic plants). Then choose one of the following:		
	Species	those species together comprise > 50% of the areal cover of herbaceous plants at any time during the year.	0	
		those species together do not comprise > 50% of the areal cover of herbaceous plants at any time during the year.	1	
F20	Invasive Plant Cover	How extensive is the cover of invasive plant species in the AA? For species, see Plants_invasive worksheet in the accompanying Supplnfo file.		[EC, PH, POL, Sens]
		invasive species appear to be absent in the AA, or are present only in trace amount (a few individuals).	1	
		invasive species are present in more than trace amounts, but comprise <5% of herbaceous cover (or woody cover, if the invasives are	0]
		woody).	_	1
		invasive species comprise 5-20% of the herb cover (or woody cover, if the invasives are woody). invasive species comprise 20-50% of the herb cover (or woody cover, if the invasives are woody).	0	1
		invasive species comprise >50% of the herb cover (or woody cover, if the invasives are woody).	0	1
F21	Invasive Cover Along	Along the wetland-upland boundary, the percent of the upland edge (within 3 m upslope from the wetland) that is occupied by invasive plant		If a plant cannot be identified to species (e.g., winter conditions) but its genus contains an exotic
	Upland Edge	species is:		species, assume the unidentified plant to also be exotic. If vegetation is so senesced that exotic
		none of the upland edge (invasives apparently absent), or AA has no upland edge.	1	species cannot be identified, answer "none". [PH, STR]
		some (but <5%) of the upland edge. 5-50% of the upland edge.	0	1
		a-sova or the upland edge. most (>50%) of the upland edge.	0	1
F22	Fringe Wetland	During most of the year, open water within or adjacent to the vegetated part of the wetland is much wider than the maximum width of the	0	[WBF, WBN, WCv]
		vegetated zone within the wetland. Enter "1" if true, "0" if false.		
F23	Lacustrine Wetland	The vegetated part of the AA is within or adjacent to a body of non-tidal standing open water whose size exceeds 8 hectares during most of	0	[FR, PR, PU, WBF, WBN]
		a normal year.		

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F24	% of AA Without Surface Water	The percentage of the AA that never contains <u>surface</u> water during an average year (that is, except perhaps for a few hours after snowmelt or rainstorms), but which is still a wetland, is:	1 hectare is 10,000 sq. m or about 2.5 acres. It could have dimensions of 100 m by 100 m, 1000 m by 10 m, or similar. [AM, FA, FR, INV, NR, PH, PR, SBM, Sens, SRv, WBF, WBN, WC]	
		<1% . In other words, all or nearly all of the AA is covered by water permanently or at least seasonally.	0	
		1-25% of the AA, or <1% but >0.01 ha never contains surface water. 25-50% of the AA never contains surface water.	0	-
		50-75% of the AA never contains surface water.	1	
		75-99% of the AA never contains surface water, or >99% AND there is at least one persistent water body larger than 1 ha in the AA.	0	
		99-100%. AND there is no persistent ponded water body larger than 1 ha within the AA. Enter *1* and SKIP to F42 (Channel Connection).	0	
F25	% of AA with Persistent Surface Water	Identify the parts of the AA that still contain surface water (flowing or ponded, open or hidden beneath vegetation) even during the driest times of a normal year, i.e., when the AA's surface water is at its lowest annual level. At that time, the percentage of the AA that still contains surface water is:		If you are unable to determine the condition at the driest time of year, ask the land owner or neighbors about it if possible. Indicators of persistence may include fish, some dragonflies, beaver, and muskrat. [AM, CS, FA, FR, INM, NR, POL, PR, SBM, WBF, WBN]
	water	None. The AA dries up completely (no water in channels either) or never has surface water during most years. SKIP to F27.	0	
		1-20% of the AA.	1	
		20-50% of the AA. 50-95% of the AA.	0	
		>95% of the AA. True for many fringe wetlands.	0	
F26	% of Summertime Water that Is Shaded	At mid-day during the warmest time of year, the area of surface water <u>within</u> the AA that is shaded by vegetation and other features that are <u>within</u> the AA at that time is:		[FA, WC]
		<5% of the water is shaded, or no surface water is present then.	0	
		5-25% of the water is shaded.	0	
		25-50% of the water is shaded. 50-75% of the water is shaded.	0	1
		>75% of the water is shaded.	1	
F27	% of AA that is	The percentage of the AA's area that is between the annual high water and the annual low water (surface water) is:		Flood marks (algal mats, adventitious roots, debris lines, ice scour, etc.) are often evident when not
	Flooded Only Seasonally	None, or <0.01 hectare and <1% of the AA. SKIP to F29.	0	fully inundated. Also, such areas often have a larger proportion of upland and annual (vs. perennial) plant species. In riverine systems, the extent of this zone can be estimated by multiplying by 2 the
	Seasonally	1-20% of the AA, or <1% but >0.01 ha.	1	bankful height and visualising where that would intercept the land along the river. [CS, FA, INV, NR,
		20-50% of the AA. 50-95% of the AA.	0	OE, PH, SR, WBF, WBN, WS]
		>95% of the AA.	0	1
F28	Annual Water	The annual fluctuation in surface water level within most of the parts of the AA that contain surface water at least temporarily is:		Look for flood marks (see above). Because the annual range of water levels is difficult to estimate
	Fluctuation Range	<10 cm change (stable or nearly so).	0	without multiple visits, consider asking the land owner or neighbors about it. [AM, CS, INV, NR, OE, PH, PR, SR, WBN, WS]
		10 cm - 50 cm change.	1	i is, ois, well, wel
		0.5 - 1 m change.	0	
		1-2 m change. >2 m change.	0	-
Is the /		d water smaller than 0.01 hectare (about 10m x 10m, or 1m x 100 m)? If so, enter "1" in column D and SKIP TO F42	0	
F29	Predominant Depth	During most of the time when surface water is present during the growing season, its depth, averaged over the entire inundated part of the AA is:		If a boat is unavailable, estimate this by considering wetland size and local topography. Or if timing and safety allow, depths may be measured by drilling through winter ice. This question is asking about the
	Class	<10 cm deep (but >0).	1	spatial median depth that occurs during most of that time, even if inundation is only seasonal or
		10 - 50 cm deep.	0	temporary. If inundation in most but not all of the wetland is brief, the answer will be based on the depth of the most persistently inundated part of the wetland. Include surface water in channels and ditches as
		0.5 - 1 m deep.	0	well as ponded areas. [CS, FA, FR, INV, OE, PH, PR, Sens, SFS, SR, WBF, WBN, WC]
		1 - 2 m deep. >2 m deep. True for many fringe wetlands.	0	-
F30	Depth Classes -	When present, surface water in most of the AA usually consists of (select one):	0	Estimate these proportions by considering the gradient and microtopography of the site. [FR, INV,
	Evenness of	One depth class that comprises >90% of the AA's inundated area (use the classes in the question above).	1	WBF, WBN]
	Proportions	One depth class that comprises 50-90% of the AA's inundated area.	0	
		Neither of above. There are 3 or more depth classes and none occupy >50%.	0	
F31	% of Water That Is Ponded (not Flowing)	During most times when surface water is present, the percentage that is (1) ponded (stagnant, or flows so slowly that fine sediment is not held in suspension) AND (2) is likely to be deeper than 0.5 m in some places, is: -5% of the water, or it occupies -100 sg.m cumulatively. Nearly all the surface water is flowing. SKIP to F34.	1	Nearly all wellands with surface water have some ponded water. [AM, CS, INV, NR, OE, PR, Sens, SR, WBF, WBN, WC, WS]
		5-30% of the water.	0	
		30-70% of the water.	0	
		70-95% of the water.	0	
F32		>95% of the water. During most of the growing season, the largest patch of open water that is ponded and is in or bordering the AA is >0.01 hectare (about 10 m by 10 m) and mostly deeper than 0.5 m. If true enter "1" and continue, if false, enter "0" and SKIP to F41 (Floating Algae & Duckweed).	0	Open water is not obscured by vegetation in aerial ("duck's eye") view. It includes vegetation floating on the water surface or entirely submersed beneath it.
F33		In ducks-eye aerial view, the percentage of the ponded water that is open (lacking emergent vegetation during most of the growing season, and unhidden by a forest or shrub canopy) is:		[AM, CS, FA, FR, INV, NR, OE, PR, SR, WBF, WBN, WC]
	that is Open	None, or <1% of the AA and largest pool occupies <0.01 hectares. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	
		1-4% of the ponded water. Enter "1" and SKIP to F41 (Floating Algae & Duckweed).	0	1
		5-30% of the ponded water.	0]
		30-70% of the ponded water.	0	
		70-99% of the ponded water. 100% of the ponded water.	0	1
F34	Width of Vegetated	At the time during the growing season when the AA's water level is lowest, the average width of vegetated area in the AA that separates	Ü	"Vegetated area" does not include underwater or floating-leaved plants, i.e., aquatic bed. Width may
	Zone within Wetland	adjoining uplands from open water within the AA is:		include wooded riparian areas if they have wetland soil or plant indicators. [AM, CS, NR, OE, PH, PR,
		<1 m.	0	SBM, Sens, SR, WBN]
		1 - 9 m. 10 - 29 m.	0	-
		30 - 49 m.	0	1
		50 - 100 m.	0]
F35	Elat Charolina Estant	> 100 m, or open water is absent at that time.	0	If coveral isolated peaks are present in early summer, estimate the persent of their calls at the attraction
F33	Flat Shoreline Extent	During most of the part of the growing season when water is present, the percentage of the AA's water edge length that is nearly flat (a slope less than about 5% measured within 5 m landward of the water) is: 11% of the water edge.	0	If several isolated pools are present in early summer, estimate the percent of their collective shorelines that has such a gentle slope. [SR, WBN]
		<1% of the water edge. 1-25% of the water edge.	0	1
		25-50% of the water edge.	0	1
		50-75% of the water edge.	0]
F2/	Debugg See	>75% of the water edge. The acceptage of the emergent varietation cover in the AA that is cattail (Tunha ann), common cod (Observitor), or tall (1 tm) bullion.	0	Exergent varieties is harbaconus plants whose the second state of
F36	Robust Emergents	The percentage of the emergent vegetation cover in the AA that is cattail (<i>Typha</i> spp.), common reed (<i>Phragmilles</i>), or tall (>1m) bulrush is:		Emergent vegetation is herbaceous plants whose stems are partly above and partly below the water surface during most of the time water is present. [WBN]
		<1% of the emergent vegetation, or emergent vegetation is absent. SKIP to F38.	0]
		1-25% of the emergent vegetation.	0	4
		25-75% of the emergent vegetation.	0	4
		>75%, of the emergent vegetation.	0	

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37	Interspersion of	During most of the part of the growing season when water is present, the spatial pattern of emergent vegetation within the water is mostly:		[AM, FA, FR, INV, NR, OE, PH, PR, SBM, SR, WBF, WBN]
	Emergents & Open		0	
	Water	Scattered. More than 30% of such vegetation forms small islands or corridors surrounded by water. Intermediate.	0	
		Clumped. More than 70% of such vegetation is in bands along the wetland perimeter or is clumped at one or a few sides of the surface water	0	
38	Persistent Deepwater	area. If the deepest patch of surface water (flowing or ponded) in or directly adjacent to the AA is mostly deeper than 0.5 m for >2 weeks during the	0	
,	Area	growing season, enter "1" and continue. If not, enter "0" and SKIP to F42.(Connection).		
	Non-vegetated Aquatic Cover	During most of the growing season and in waters deeper than 0.5 m, the cover for fish, aquatic invertebrates, and/or amphibians that is provided NOT by living vegetation, but by accumulations of dead wood and undercut banks is:		For this question, consider only the wood that is at or above the water surface. Estimates of underwater wood based only on observations from terrestrial viewpoints are unreliable so should not be attempted.
		Little or none.	0	[AM, FA, FR, INV]
		Intermediate. Extensive.	0	
40	solated Island	The AA contains (or is part of) an island or beaver lodge within a lake, pond, or river, and is isolated from the shore by water depths >1 m on	0	[WBN]
		all sides during an average June. The island may be solid, or it may be a floating vegetation mat that is sufficiently large and dense to support a waterbird nest.		TO DO MOST
	Duckweed	At some time of the year, mats of algae and/or duckweed are likely to cover >50% of the AA's otherwise-unshaded water surface, or blanket >50% of the underwater substrate. If true, enter "1" in next column. If unitrue or uncertain, enter "0".	0	[EC, PR, WBF]
	Channel Connection & Outflow Duration	The most persistent surface water connection (outlet channel or pipe, dilct, or overbank water exchange) between the AA and a downslope stream network is; [Note: If the AA represents only part of a wetland, answer this according to whichever is the least permanent surface connection: the one between the AA and the rest of the wetland, or the surface connection between the wetland and the downslope stream network.] Persistent (surface water flows out for >9 months/year).	1	Consider the connection regardless of whether the surface water is frozen. The "downslope stream network" could consist of ditches, rivers, ponds, or lakes which eventually connect to the ocean. If this cannot be determined while visiting the AA, consult topographic maps perhaps by viewing these online with Toporama (http://atlas.nrcan.gc.ca/toporama/en/index.html) [CS, FA, FR, NR, OE, PR, Sens, SFS SR, WCv, WS]
		Seasonal (surface water flows out for 14 days to 9 months/year, not necessarily consecutive).	0	
		Temporary (surface water flows out for <14 days, not necessarily consecutive). None but maps show a stream network downslope from the AA and within a distance that is less than the AA's length. SKIP to F47 (pH	0	
		Measurement).		
		No surface water flows out of the wetland except possibly during extreme events (<once (ph="" 10="" a="" an="" ditch,="" f47="" flows="" into="" lacks="" lake="" measurement).<="" only="" or="" or,="" outlet.="" per="" skip="" td="" that="" to="" water="" wetland,="" years).=""><td>0</td><td></td></once>	0	
43	Outflow Confinement	During major runoff events, in the places where surface water exits the AA or connected waters nearby, the water:		"Major runoff events" would include biennial high water caused by storms and/or rapid snowmelt. [CS, NR, OE, PR, Sens, SR, STR, WS]
		Mostly passes through a pipe, culvert, narrowly breached dike, berm, beaver dam, or other partial obstruction (other than natural topography)	0	wk, ue, mk, seils, sk, sik, wsj
		that does not appear to drain the wetland artificially during most of the growing season. Leaves through natural exits (channels or diffuse outflow), not mainly through artificial or temporary features.	1	
		is exported more quickly than usual due to ditches or pipes within the AA or connected to its outlet, or within 10 m of the AA's edge, which drain the wetland artificially, or water is pumped out of the AA.	0	
44	Tributary Channel	At least once annually, surface water from a tributary channel that is >100 m long moves into the AA. Or, surface water from a larger		If inlet tributaries cannot be searched for due to inaccessibility of part of the AA, follow suggestions in
		permanent water body adjacent to the AA spills into the AA. If it enters only via a pipe, that pipe must be fed by a mapped stream or lake further upslope. If no, SKIP to F47 (pH Measurement).	1	F42 above. [NRv, PH, PRv, SRv]
	Input Water Temperature	Based on lack of shade, water source characteristics, or actual temperature measurements, the inflow is likely to be warmer than surface water in the AA during part of most years. Enter 1= yes, 0= no.	1	[WCv]
46	Throughflow	During its travel through the AA at the time of peak annual flow, water arriving in channels: [select only the ONE encountered by most of the		[FA, FR, INV, NR, OE, PR, SR, WS]
	Resistance	incoming water]. Does not bump into many plant stems as it travels through the AA. Nearly all the water continues to travel in unvegetated (often incised)	0	
		channels that have minimal contact with welland vegetation, or through a zone of open water such as an instream pond or lake.	U	
		Bumps into herbaceous vegetation but mostly remains in fairly straight channels.	1	
		Bumps into herbaceous vegetation and mostly spreads throughout, or is in widely meandering, multi-branched, or braided channels.	0	
		Bumps into tree trunks and/or shrub stems but mostly remains in fairly straight channels.	0	
		Bumps into tree trunks and/or shrub stems and follows a fairly indirect path from entrance to exit (meandering, multi-branched, or braided).	0	
47	pH Measurement	The pH in most of the AA's surface water:		Preferably, measure this in larger areas of ponded surface water within the AA, or in streams that have
		Was measured, and is: [enter the reading in the column to the right.]		passed through (not along) most of the AA. Unless surface water is completely absent, do not dig holes or make depressions in peat in order to provide water for this measurement. Avoid measuring near
		Was not measured but surface water is present and is darkly tea-coloured. Or if no surface water, then mosses and plants that indicate peatland (e.g., Labrador tea) are prevalent. Enter "1".	0	roads or in puddles formed only by recent rain. [AM, FA, FR, NR, WBF, PH, PR, Sens, WBF, WBN]
		Neither of above. Enter *1".	- 1	
	TDS and/or Conductivity	The TDS (total dissolved solids) or conductivity off the AA's surface water is: (select the first true row with information):		See above for measurement guidance. [FR, INV, NRv, PH, PRv, Sens]
	Conductivity	TDS is: [Enter the reading in ppm or mg/L in the column to the right, if measured, or answer next row.] Conductivity is [Enter the reading in µS/cm in the column to the right.]		
		Was not measured, but plants that indicate saline conditions cover much of the vegetated AA. Enter "1".	0	
10	D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Neither of above	1	[FA, FR, PH, SBM, Sens, WBF, WBN]
49	Beaver Probability	Use of the AA by beaver during the past 5 years is (select most applicable ONE): Evident from direct observation or presence of gnawed limbs, dams, tracks, dens, lodges, or extensive stands of water-killed trees (snags).	0	II A, I B, F II, JUN, JEIB, WOF, WONJ
			U	
		Likely based on known occurrence in the region and proximity to suitable habitat, which may include: (a) a persistent freshwater wetland, pond, or lake, or a perennial low or mid-gradient (<10%) channel, and (b) a corridor or multiple stands of hardwood trees and shrubs in	1	
		vegetated areas near surface water.		
	0 1 1 01 11	Unlikely because site characteristics above are deficient, and/or this is a settled area or other area where beaver are routinely removed. Select first applicable choice:	0	Adhere to these criteria strictly do not use personal judgment based on fen conditions, pH, or other
50 (Groundwater Strength	Select III St applicable choice.		evidence. Consult topographic maps to detect breaks in slope described here. Rust deposits
	Groundwater Strength of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater.	0	evidence. Consult lopographic maps to detect the ask in stope described neter. Nots deposits associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRV, SFS, WC, WS]
		Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater	0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations
C	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown.		associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter, [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS]
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; 51	of Evidence	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of -5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: 2% or the AA has no surface water outlet (not even seasonally). 2.5%. 6-10%.	0 1 0 1	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer to measure this. Free clinometer apps can be downloaded to smartphones. If the wetland is large (longer than - 1 km), this may be estimated using Google Earth to determine the minimum and
S51 Note for adjacen	of Evidence Internal Gradient r the next three quest t. In many situations, the	Springs are known to be present within the AA, or if groundwater levels have been monitored, that has demonstrated that groundwater primarily discharges to the wetland for longer periods during the year than periods when the wetland recharges the groundwater. Most of the AA has a slope of >5%, or is very close to the base of a natural slope longer than 100 and much steeper than the slope of the AA, AND the pH of surface water, if known, is >5.5. Neither of above is true, although some groundwater may discharge to or flow through the AA. Or groundwater influx is unknown. The gradient along most of the flow path within the AA is: -2% or the AA has no surface water outlet (not even seasonally). 2-5%. 6-10%. -105%. The AA lacks an upland edge, evaluate based on the AA's entire perimeter, and moving outward into whatever areas are need equestions are best answered by measuring from aerial images.	0 1 0 1 0	associated with groundwater seeps may be most noticeable as orange discoloration in ice formations along streams during early winter. [AM, CS, FA, FR, INV, NR, OE, PH, PRv, SFS, WC, WS] This is not the same as the shoreline slope. It is the elevational difference between the AA's inlet and outlet, divided by the flow-distance between them and converted to percent. If available, use a clinometer post can be downloaded to smartphones. If the welland is large (longer than –1 km), this may be estimated using Google Earth to determine the minimum and maximum elevation within the AA, then dividing by length and multiplying by 100. [CS, NR, OE, PR, SR, WBF, WBN, WS]
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53	Type of Cover in Buffer	Within 30 m upslope of where the wetland transitions to upland, the upland land cover that is NOT perennial vegetation is mostly (mark ONE):		[AM, FA, INV, NRv, PH, POL, SBM, STR, WBN]
	Type or obver in Buner	, , , , , , , , , , , , , , , , , , , ,		
		Impervious surface, e.g., paved road, parking lot, building, exposed rock.	0	
	D # 01	Bare or nearly bare pervious surface or managed vegetation, e.g., lawn, row crops, unpaved road, dike, landslide.	0	(ND DD C CD)
54	Buffer Slope	The steepest and/or most disturbed part of the upland area that is within 30 m of the wetland and occupies >10% of that upland area has a percent slope of:		[NRv, PRv, Sens, SRv]
		<1% (flat almost no noticeable slope) or all the area within 30 m of the AA edge is other wetlands.	0	
		2-5%.	1	
		5-30%.	0	
		>30%.	0	
55	Cliffs or Steep Banks	In the AA or within 100 m, there are elevated terrestrial features such as cliffs, falus slopes, stream banks, or excavated pits (but not riprap) that extend at least 2 m nearly vertically, are unvegetated, and potentially contain crevices or other substrate suitable for nesting or den areas. Enter 1 (yes) or 0 (no).	1	Do not include upturned trees as potential den sites. [POL, SBM]
	New or Expanded Wetland	Human actions within or adjacent to the AA have persistently expanded a naturally occurring wetland or created a wetland where there previously was none (e.g., by excavation, impoundment):		Determine this using historical aerial photography, old maps, soil maps, or permit files as available [CS NR, OE, PH, Sens]
		No.	1	
		Yes, and created or expanded 20 - 100 years ago. Yes, and created or expanded 3-20 years ago.	0	4
		Yes, and created or expanded within last 3 years.	0	1
		Yes, but time of origin or expansion unknown.	0	1
		Unknown if new or expanded within 20 years or not.	0	1
57	Burn History	More than 1% of the AA's previously vegetated area:		Look for charred soil or stumps (in multiple widely-spaced locations) or ask landowner. [CS, PH, STR]
		Burned within past 5 years.	0	
		Burned 6-10 years ago.	0	1
		Burned 11-30 years ago.	0	
		Burned >30 years ago, or no evidence of a burn and no data.	1	
58	Visibility	The maximum percentage of the wetland that is visible from the best vantage point on public roads, public parking lots, public buildings, or		[PU, STR, WBFv]
		public maintained trails that intersect, adjoin, or are within 100 m of the AA (select one) is:		
		<25%.	1	
		25·50%. >50%.	0	4
59	Non-consumptive	Assuming access permission was granted, select ALL statements that are true of the AA as it currently exists:	U	[PU, STR]
0,	Uses - Actual or			[0, 0.11 ₄
	Potential	For an average person, walking is physically possible <u>in</u> (not just near) >5% of the AA during most of the growing season, e.g., free of deep water and dense shrub thickets. Maintained roads, parking areas, or foot-trails are within 10 m of the AA, or the AA can be accessed part of the year by boats arriving via	0	
		configuous waters. Within or near the AA, there is an interpretive center, trails with interpretive signs or brochures, and/or regular guided interpretive tours.	0	
60	Unvisited Core Area	The percentage of the AA almost never visited by humans during an average growing season probably comprises: [Note: Only include the		[AM, FAv, FRv, PH, PU, SBM, STR, WBF, WBN]
		part actually walked or driven (not simply viewed from) with a vehicle or boat. Do not include visitors on trails outside of the AA unless more than half the wetland is visible from the trails and they are within 30 m of the wetland edge. In that case include only the area occupied by the trail.]		
		<5% and no inhabited building is within 100 m of the AA.	0	
		<5% and inhabited building is within 100 m of the AA.	0	1
		5-50% and no inhabited building is within 100 m of the AA.	0	
		5-50% and inhabited building is within 100 m of the AA.	0	
		50-95%, with or without inhabited building nearby.	0	
		>95% of the AA with or without inhabited building nearby.	1	CAM DIL DIL COM CTD WOR WON
61	Frequently Visited Area	The part of the AA visited by humans almost daily for several weeks during an average growing season probably comprises: [See note above.]		[AM, PH, PU, SBM, STR, WBF, WBN]
	Alea	<5%. If F60 was answered ">95%" (mostly never visited), SKIP to F64.	1	
		5-50%.	0	
		50-95%.	0	1
		>95% of the AA.	0	
62	BMP - Soils	Boardwalks, paved trails, fences or other infrastructure and/or well-enforced regulations appear to effectively prevent visitors from walking on soil within nearly all of the AA when the soil is unfrozen. Enter "1" if true.	0	[PH, PU]
63	BMP - Wildlife Protection	Fences, observation blinds, platforms, paved trails, exclusion periods, and/or well-enforced prohibitions on motorised boats, off-leash pets, and off road vehicles appear to effectively exclude or divert visitors and their pets from the AA at critical times in order to minimize disturbance of wildlife (except during hunting seasons). Enter "1" if true.	0	[AM, PU, WBF, WBN]
64	Consumptive Uses	Recent evidence was found within the AA of the following potentially-sustainable consumptive uses. Select ALL that apply.		[FAv, FRv, WBFv]
	(Provisioning Services)	Low-impact commercial timber harvest (e.g., selective thinning).	0	1
		Commercial or traditional-use harvesting of native plants, their fruits, or mushrooms.	0	1
		Waterfowl hunting.	0	
		Fishing.	0]
		Trapping of furbearers.	0	
45	D	None of the above. The elegant walls or water hading that currently provide disking water are:	1	MDd
65	Domestic Wells	The closest wells or water bodies that currently provide drinking water are:		[NRv]
		Within 0-100 m. of the AA.	0]
		100-500 m. away.	0	
66		>500 m. away, or no information.	1	Taylog)
	Calcareous Fen	The AA is, or is part of, a calcareous fen. See the Plants_Calcar worksheet in the accompanying Supplnfo file for list of plant indicators	0	[PH, PR]

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gator: Derrick Mitchell	Site Identifier: PLW-W-06	D	ate: 11 October 2019					
essor (S) Data Form for Non-Tidal	Wetlands, WESP-AC for New B	runswick, Version 2.		D				
Aberrant Timing of Water Inputs	7.0.1.0.1.0.1.7.0.1.0.1.1.0.1.2	. anomen vereion zi		H				
	to have accord the timing of water inputs (but not personally their	is valumed to shift by hours, days, or weeks, becoming either more n	mutad (amallar or loss frequent peaks aproad over langer time					
n the last column, place a check mark next to any item that is likely to have caused the timing of water inputs (but not necessarily their volume) to shift by hours, days, or weeks, becoming either more muted (smaller or less frequent peaks spread over longer times nore temporal homogeneity of flow or water levels) or more flashy (larger or more frequent spikes but over shorter times). [FA, FR, INV, PH, STR]								
Stormwater from impervious surfaces that drains directly to the wetland.								
Water subsidies from wastewater effluent, septic system leakage, snow storage areas, or irrigation.								
Regular removal of surface or groundwater for irrigation or other co	nsumptive use.							
Flow regulation in tributaries or water level regulation in adjoining water body, or other control structure at water entry points that regulates inflow to the wetland.								
A dam, dike, levee, weir, berm, or fill - within or downgradient from the wetland that interferes with surface or subsurface flow in/out of the AA (e.g., road fill, wellpads, pipelines).								
Excavation within the wetland, e.g., dugout, artificial pond, dead-end ditch.								
Artificial drains or ditches in or near the wetland.								
Accelerated downcutting or channelization of an adjacent or internal	il channel (incised below the historical water table level).							
Logging within the wetland.	machinery livestack fire drainers or off read vehicles							
Subsidence or compaction of the wetland's substrate as a result of Straightening, ditching, dredging, and/or lining of tributary channels								
If any items were checked above, then for each row of the table belo		no measurable effect on the timing of water conditions in any part of	f the AA then leave the "O's" for the scores in the following row	c				
To estimate effects, contrast the current condition with the condition		to measurable effect on the liming of water conditions in any part of	The AA, then leave the 03 for the scores in the following for	, s.				
	Severe (3 points)	Medium (2 points)	Mild (1 point)					
Spatial extent of timing shift within the wetland:	>95% of wetland.	5-95% of wetland.	<5% of wetland.					
When most of the timing shift began:	<3 yrs ago.	3-9 yrs ago.	10-100 yrs ago.					
Score the following 2 rows only if the altered inputs began within pas								
Input timing now vs. previously:	Shift of weeks.	Shift of days.	Shift of hours or minutes.					
	Became very flashy or controlled.	Intermediate.	Became mildly flashy or controlled.					
Flashiness or muting:	became very liasily of controlled.							
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FieldS form Non-tidal 1

	buting Area																
In the last column, place a check mark next to any item present in the CA that is likely to have elevated the load of waterborne or windborne sediment reaching the wetland from its CA. [FA, FR, INV, PH, SRv, STR]																	
Erosion from plowed fields, fill, timber harvest, dirt roads, vegeta	tion clearing, fires.																
Erosion from construction, in-channel machinery in the CA. Erosion from off-road vehicles in the CA. Erosion from livestock or foot traffic in the CA. Stormwater or wastewater effluent. Sediment from road sanding, gravel mining, other mining, oil/ gas extraction.																	
									ccelerated channel downcutting or headcutting of tributaries due to altered land use.								
									Other human-related disturbances within the CA.								
										elow, assign points (3, 2, or 1 as shown in header) in the last colum nte effects, contrast the current condition with the condition if the che		add significantly more sediment or suspended solids to the AA,					
										Severe (3 points)	Medium (2 points)	Mild (1 point)					
Erosion in CA:	Extensive evidence, high intensity.*	Potentially (based on high-intensity* land use) or scattered evidence.	Potentially (based on low-intensity* land use) with little or no direct evidence.														
Recentness of significant soil disturbance in the CA:	Current & ongoing.	1-12 months ago.	>1 yr ago.														
Duration of sediment inputs to the wetland:	Frequent and year-round.	Frequent but mostly seasonal.	Infrequent & during high runoff events mainly.														
AA proximity to actual or potential sources:	0 - 15 m.	15-100 m.	In more distant part of contributing area.														
* high-intensity= extensive off-road vehicle use, plowing, grading	excavation, erosion with or without veg removal; low-intensity= veg	removal only with little or no apparent erosion or disturbance of	Sum=	0													
soil or sediment.			Juli-														
	sessment Area		Stressor subscore=	0.00													
soil or Sediment Alteration Within the Ass	the wetland that is likely to have compacted, eroded, or otherwise a	altered the wetland's soil. Consider only items occurring within pa	Stressor subscore=														
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FieldS form Non-tidal 2

Assessment Area (AA) Results:

Wetland ID: PLW-W-06

Date: 11 October 2019 Observer: Derrick Mitchell

Latitude & Longitude (decimal degrees): 45.166706, -66.208365

Scores will appear below after data are entered in worksheets OF, F, and S. See Manual for definitions and descriptions of how scores were computed.

сотралеа.						
Wetland Functions or Other Attributes:	Function Score (Normalised)	Function Rating	Benefits Score (Normalised)	Benefits Rating	Function Score (raw)	Benefits Score (raw)
Water Storage & Delay (WS)	1.29	Lower	0.50	Lower	2.72	0.58
Stream Flow Support (SFS)	6.67	Higher	3.76	Moderate	3.56	2.19
Water Cooling (WC)	7.80	Higher	5.11	Higher	5.20	3.08
Sediment Retention & Stabilisation (SR)	1.30	Lower	6.16	Moderate	4.05	3.74
Phosphorus Retention (PR)	2.94	Moderate	5.53	Higher	4.98	5.33
Nitrate Removal & Retention (NR)	0.26	Lower	10.00	Higher	3.99	10.00
Carbon Sequestration (CS)	3.31	Moderate			5.99	
Organic Nutrient Export (OE)	8.43	Higher			6.81	
Anadromous Fish Habitat (FA)	0.00	Lower	0.00	Lower	0.00	0.00
Resident Fish Habitat (FR)	0.00	Lower	0.00	Lower	0.00	0.00
Aquatic Invertebrate Habitat (INV)	6.77	Higher	4.77	Moderate	6.26	3.82
Amphibian & Turtle Habitat (AM)	5.13	Moderate	7.16	Higher	6.01	6.43
Waterbird Feeding Habitat (WBF)	5.87	Moderate	6.67	Moderate	4.67	6.67
Waterbird Nesting Habitat (WBN)	4.98	Moderate	6.67	Moderate	4.26	6.67
Songbird, Raptor, & Mammal Habitat (SBM)	9.61	Higher	6.67	Moderate	7.97	6.67
Pollinator Habitat (POL)	10.00	Higher	6.67	Moderate	8.19	6.67
Native Plant Habitat (PH)	8.69	Higher	8.77	Higher	6.59	7.61
Public Use & Recognition (PU)			2.18	Lower		1.88
Wetland Sensitivity (Sens)			4.75	Moderate		3.63
Wetland Ecological Condition (EC)			7.11	Higher		8.33
Wetland Stressors (STR) (higher score means more stress)			0.22	Lower		2.34
Summary Ratings for Grouped Functions:						
HYDROLOGIC Group (WS)	6.67	Higher	0.50	Lower	2.72	0.58
WATER QUALITY SUPPORT Group (max+avg/2 of SR, PR, NR, CS)	2.22	Lower	8.62	Higher	5.37	8.18
AQUATIC SUPPORT Group (max+avg/2 of SFS, INV, OE, WC)	7.92	Higher	4.83	Moderate	6.13	3.42
AQUATIC HABITAT Group (max+avg/2 of FA, FR, AM, WBF, WBN)	4.53	Moderate	5.63	Moderate	4.50	5.31
TRANSITION HABITAT Group (max+avg/2 of SBM, PH, POL)	9.72	Higher	8.07	Higher	7.89	7.29
WETLAND CONDITION (EC)			7.11	Higher		8.33
WETLAND RISK (average of Sensitivity & Stressors)			2.49	Lower		2.98
	LIOTE I					

NOTE: A score of 0 does not mean the function or benefit is absent from the wetland. It means only that this wetland has a capacity that is equal or less than the lowest-scoring one, for that function or benefit, from among the 98 NB calibration wetlands that were assessed previously.

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Burchill Wind Project Environmental Impact Assessment: Addendum 3 Natural Forces September 2020

Appendix B

Updated Archeological Report

Archaeological Assessment of the Proposed Burchill Wind Farm near Saint John, NB

Permit #: 2020 NB 35

Prepared for

Natural Forces Developments LP

by

Jason Jeandron, MPhil.

Archaeological Prospectors
PO Box 393
Fredericton, NB
E3B 4Z9
17/08/20



ABSTRACT

On August 10 & 11th, 2020, an archaeological pedestrian survey took place at the location of a proposed wind farm near Lorneville, NB. The pedestrian survey was undertaken to identify any extant heritage/archaeological features of significance, any visible significant artifacts or if any potential exists for the presence of buried archaeological sites.



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INTRODUCTION

Natural Forces Development LP commissioned the work of an archaeologist to mitigate the potential negative effects of construction activity surrounding the development of a wind farm near Lorneville, New Brunswick (see Figures 1 & 2). In advance of construction activities associated with the wind farm development, the locations of thirteen wind turbines west of Saint John were assessed for the presence of heritage resources and the potential for buried archaeological remains.



PREVIOUS RESEARCH

There are not any previously recorded archaeological sites registered at Archaeological Services New Brunswick within the vicinity of the proposed construction activities in the area surveyed.

The Borden system is a nation-wide, geographically based method for recording sites of archaeological value. In New Brunswick, each Borden block is 10 minutes of latitude by 10 minutes of longitude. Each of these blocks is referred to by a four-letter code, which describes the location of that particular block. Consequently, sites within each Borden block are numbered sequentially in the order in which they are reported. The Borden block that is of concern to this report is BhDm.



METHODS

The information presented in this report was gained through research of relevant documents from Archaeological Services in Fredericton and published materials, including topographic and surficial geology maps & reports, aerial photographs, LiDAR data, and the New Brunswick Register of Historic Places. The field component was conducted using intensive visual inspection through pedestrian surveying. Each turbine area was assessed (see Figure 22).



RESULTS

A review of early and modern aerial photographs (1935 5093/048 & 059) failed to indicate any extant cultural features of interest. The air photos and topographical mapping indicate that the assessed area of the proposed wind farm is sited across an area that has previously been forested with occasional wood lots and rests at an elevation of ~57-73 m asl. As can also be seen from the remotely sensed data (see Figure 3), the project area is comprised of flat areas with several increases in elevation, which are usually bedrock outcrops. The flat areas are often at the lower local elevations and were sometimes wet and classified as a wetland. While bedrock can clearly be seen at the surface in places, there is also a good chance that much of the wet surface can be attributed to the near-surface presence of marine clay. The maximum elevation of the marine transgression is reported to be ~61 m asl (Lohse, 1977), which places much of the project area below or near this level (see Figure 5).

The bedrock geology of the area, the outcrops on which some of the turbines are proposed, is comprised of four different formations – Taylor Island, Saint John Group, Ashburn and the Spruce Lake Tonalite (Barr and White, 2005). Of potential interest is the middle to late Neoproterzoic Ashburn Formation which is reported to contain white to grey fine-grained quartzite. This quartzite may have been used in the production of stone tools. Turbines 6e & 7e are sited in the area resting on the Ashburn Formation deposits.

The notable surficial geology of the project area consists of ice contact and marine shallow water deposits (see Figure 4). In the north of the project area, an elongated ice contact deposit was mapped with at least three recorded gravel pits. Below the topsoil, this deposit is described as fine to coarse-grained sand with fine to coarse gravel to several metres in depth. Turbine 10e is sited near the northern edge of this deposit. In the south of the map area, a couple of marine shallow water deposits were mapped, just south and immediately west of Turbine 2e and north of Turbine 11e. These deposits are also described as fine to coarse-grained sand with fine to coarse gravel to several metres in depth.

With the maximum marine limit at ~61 m asl, it is assumed that early habitation sites may be found in close proximity to this migrating shoreline. Turbines 2e, 5e, 6e, 7e, 8e, 9e, 11e, 12e & 13e are at elevations at or below the 61 m asl level and consequently are considered as holding high potential for the presence of Indigenous archaeological remains.



A few streams were noted within the project area, along with many mapped wetlands, which are known to be great sources of food & resources as well as being ideal locations for human habitation for thousands of years after the last glaciation. Each of these modern and ancient geographical features should be considered as holding high potential for the presence of Indigenous archaeological remains.

No evidence of significant extant structures was visible during the desktop survey or in the field. In the near vicinity of Turbine 1e (~45 m south-east), a garbage dump was noted along an overgrown dirt road. Much of the forest floor is covered in a thick layer of moss, likely obscuring most of the smaller discarded items, but a few abandoned cars were clearly visible. Only one had enough markings visible to be identified as an early 1960s Pontiac Laurentian (see Figure 7). At Turbine 9e, a couple of particularly flat & level areas between bedrock outcrops that would be ideal locations for habitation, providing protection from some of the elements (see Figure 16). Also at Turbine 9e (~45 m north-west), a gap in the bedrock stood out (see Figure 17). While it is possible that this is natural, it also holds the potential to be an Indigenous quarry site. In a couple of other areas at Turbine 9e, veins of quartz were exposed at the surface. Some turbine locations (including Turbine 5e (see Figure 11)), are placed near areas of bedrock outcropping that could be used as rock shelters; ideal areas for habitation during the late Pleistocene and early Holocene. Consequently, these turbine locations meet the criteria for holding high potential for the presence of significant archaeological resources.

Throughout the course of the pedestrian survey, there were not any culturally significant extant or exposed features/artifacts identified. If any change to the proposed footprint of this project is anticipated, then consultation with a permitted archaeologist should occur to ensure a minimal amount of damage to any buried heritage that may be present.



CONCLUSIONS & RECOMMENDATIONS

On August 10th & 11th, 2020, an archaeological pedestrian survey took place at a proposed wind farm west of Lorneville, NB. The assessment of this area resulted in the failure to identify any evidence of significant past human use at the locations of the proposed 13 turbines locations. However, nine turbine locations (Turbines 2e, 5e, 6e, 7e, 8e, 9e, 11e, 12e & 13e) rest in areas that are considered to hold high potential for significant archaeological remains. The age of the Pontiac Laurentian near Turbine 1e falls outside of the range considered significant enough to record as an archaeological site (75+ years), the other two or more vehicles may reach that threshold, but more work to uncover and identify those will be needed.

Due to their proximity to the former marine shoreline, Turbines 2e, 5e, 6e, 7e, 8e, 9e, 11e, 12e & 13e should be considered as holding high potential for the presence of early postglacial archaeology. Following the *Guidelines* (2012), archaeological test pits should be excavated on a 5 m grid anywhere ground-disturbing activities (removing tree stumps, use of heavy equipment etc) will occur as follows: (c) extends within 50 metres of the banks or shores of a current or former body of water (i.e., river, lake, bay, etc.) – for areas between 50-80 metres from current or former body of water see: Medium Potential (a 10 m grid). Initially, it might be suitable to excavate test pits along a transect (in a N/S direction) at each of these locations, to better understand the surficial geology and the potential for early human habitation and to narrow focus. Additionally, minimising the amount of ground disturbing activity will limit the amount of effort required to identify the presence/absence of archaeology (i.e. only clear area for turbine pad, leave stumps beyond).



REFERENCES

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- 1977 Granular Aggregate Resources of Musquash Map Area 21 G/1, New Brunswick. Province of New Brunswick, Mineral Resources Branch. Topical Report 77-2.

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2012 Guidelines and Procedures for Conducting Professional Archaeological Assessments in New Brunswick. Archaeological Services Unit, Fredericton.



APPENDIX



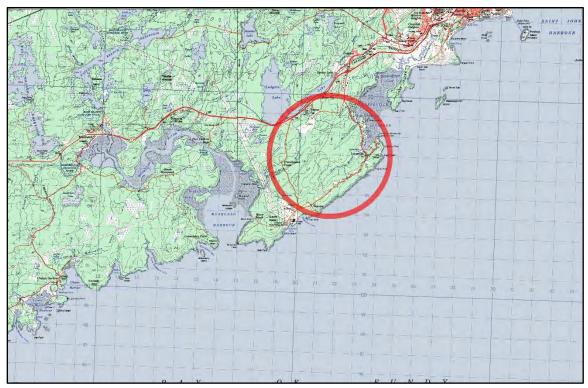


Figure 1: Approximate location of the proposed wind farm. (21 G/01)



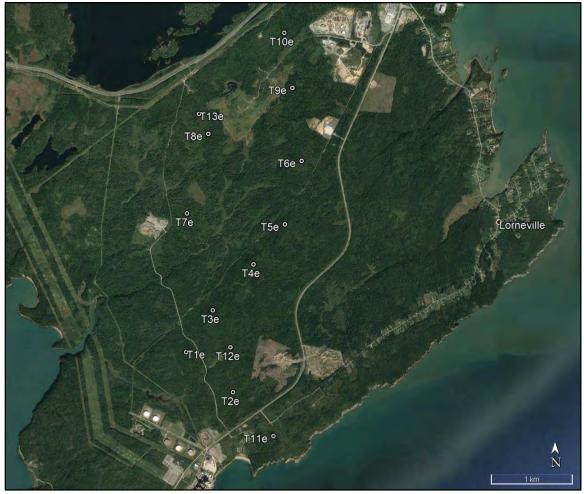


Figure 2: Project area with locations of turbines.



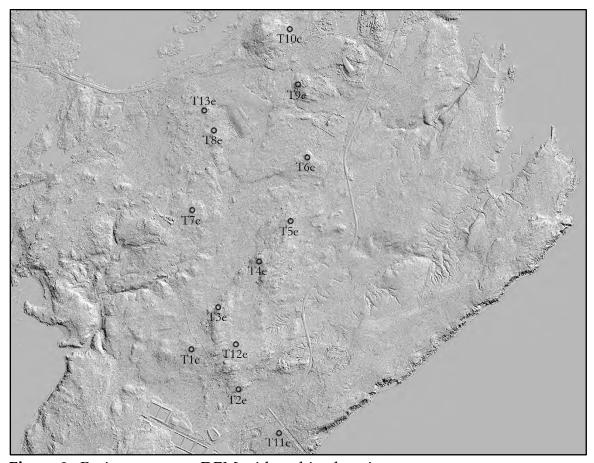


Figure 3: Project area on a DEM with turbine locations.





Figure 4: Project area on a satellite image with turbine locations & geology. The southern deposits are 'marine shallow water deposits', and the northern deposit is a 'ice contact stratified drift'.





Figure 5: Project area on a satellite image with turbine locations and 60 m+ elevations.





Figure 6: Proposed placement for Turbine 1e.



Figure 7: An early 1960's Pontiac Laurentian in a dump ~45 m south-east of T1e.





Figure 8: Proposed placement for Turbine 2e.



Figure 9: Proposed placement for Turbine 3e.





Figure 10: Proposed placement for Turbine 4e.



Figure 11: Proposed placement for Turbine 5e.





Figure 12: Proposed placement for Turbine 6e.



Figure 13: Proposed placement for Turbine 7e.





Figure 14: Proposed placement for Turbine 8e.



Figure 15: Proposed placement for Turbine 9e.





Figure 16: A flat, level area between bedrock outcrops near Turbine 9e.



Figure 17: An opening in the bedrock near Turbine 9e.





Figure 18: Proposed placement for Turbine 10e.



Figure 19: Proposed placement for Turbine 11e.





Figure 20: Proposed placement for Turbine 12e.



Figure 21: Proposed placement for Turbine 13e.





Figure 22: Turbines and tracklog on a satellite image.

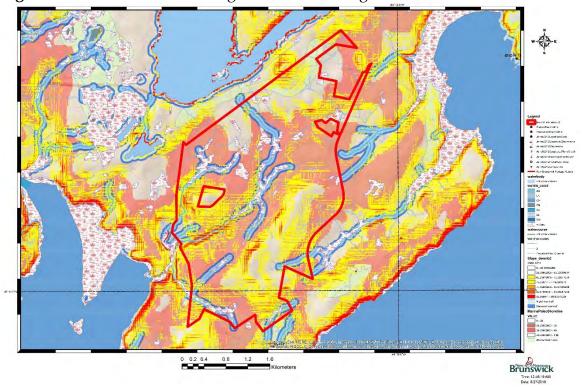


Figure 23: The required predictive model purchased from the Province.

