



## WOCAWSON ENERGY PROJECT ADDENDUM

### TRANSMISSION LINE ACCESS ROUTE MONITORING

Proposed Routes and Additional Aquatic, Vegetation, and Wildlife Surveys



**List of Figures:**

Figure 1: All potential access routes into the proposed transmission line for installation. .... 2  
Figure 2: Wetlands and watercourses along the potential access routes into the transmission line. .... 3  
Figure 3: Habitat types along all potential access routes into the transmission line. .... 4

**List of Appendices:**

Appendix A: Wetlands and Watercourses Addendum (EIA Section 4.2.3)  
Appendix B: Wildlife and Wildlife Habitat Addendum (EIA Section 4.2.5)  
Appendix C: Vegetation and Habitat Addendum (EIA Section 4.2.6)

## Summary

The proposed Wocawson Energy Project (WEP) consists of 5-10 wind turbines capable of producing 20-40 MW of renewable energy. The Project will also require a 34.5kV collection system, a substation, and 5.25km of new transmission line. All infrastructure except the transmission line will be constructed, owned, operated and maintained by the Proponent, Wocawson Energy Limited Partnership. The new proposed transmission line will connect the Project to the existing New Brunswick Power (NBP) transmission grid and will be constructed, owned, operated and maintained by NBP.

As the WEP requires 5.25km of new transmission line, it will also require the use of access routes into the proposed line to facilitate installation. This addendum includes the survey results for all proposed transmission line access routes that may be used to access the line. The surveys along these access routes were conducted following the methodology outline in the Wocawson Energy Project EIA registration document. These access routes will make use of existing trails near the proposed line which may need to be upgraded to support the required equipment. The roads that will be used to access the transmission line will need to be widened to approximately 6m. Additionally, where significant turns are located, access routes may need to be widened up to 12m.

Figure 1 demonstrates all possible access roads that were surveyed for the purposes of this EIA. These different routes allow flexibility for the contractor to choose their preferred route into the proposed transmission line during construction. As such, it is not anticipated that all of these access routes will be used.

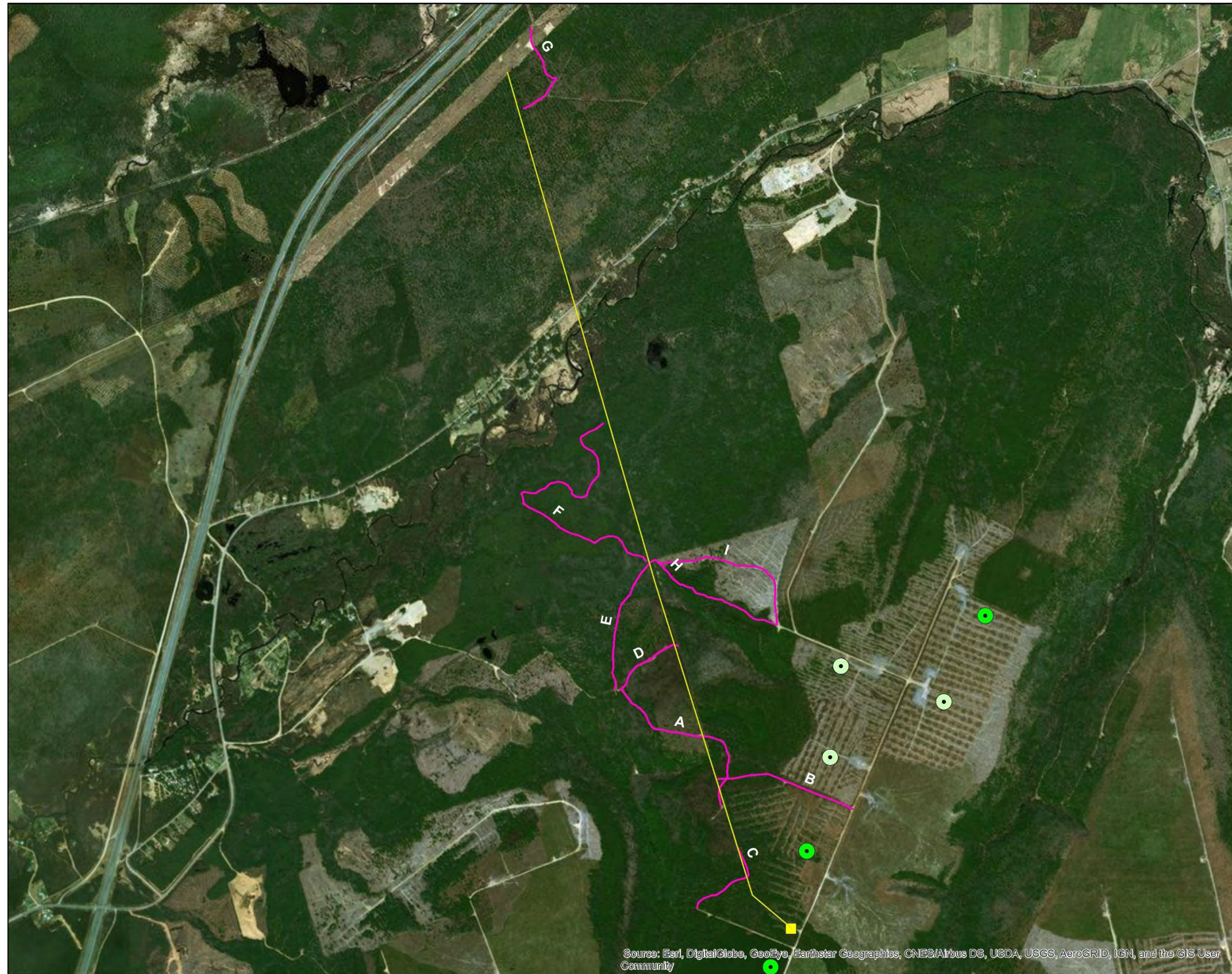
Proposed access routes were provided by NBP to the Proponent in mid-August and biologists from Dillon Consulting were engaged to conduct field surveys on these new areas.

Wetland and watercourse surveys along these proposed routes are compiled in Appendix A of this Addendum. No additional wetlands or watercourses were observed above what has been identified during the initial site surveys. Figure 2 below demonstrates the access routes in relation to wetlands and watercourses.

A full list of wildlife species observed on each trail is provided in Appendix B of this Addendum and photos of wildlife habitat along each trail are demonstrated within. No wildlife species at risk or species of conservation concern have been identified along the proposed access routes.

A full list of vegetation observed on each proposed trail is provided in Appendix C of this Addendum. The proposed access routes in relation to different habitat types is demonstrated in Figure 2. No vegetative species at risk, or of conservation concern have been identified along the proposed access routes.





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Wocawson Energy Project

---

**Transmission Line Access Routes**

---

Legend

- Proposed Phase 1 Turbines
- Proposed Phase 1 Alternate Turbines
- Substation
- Transmission Line
- Potential Access Routes

N

1:30,000

0      600      1,200      1,800

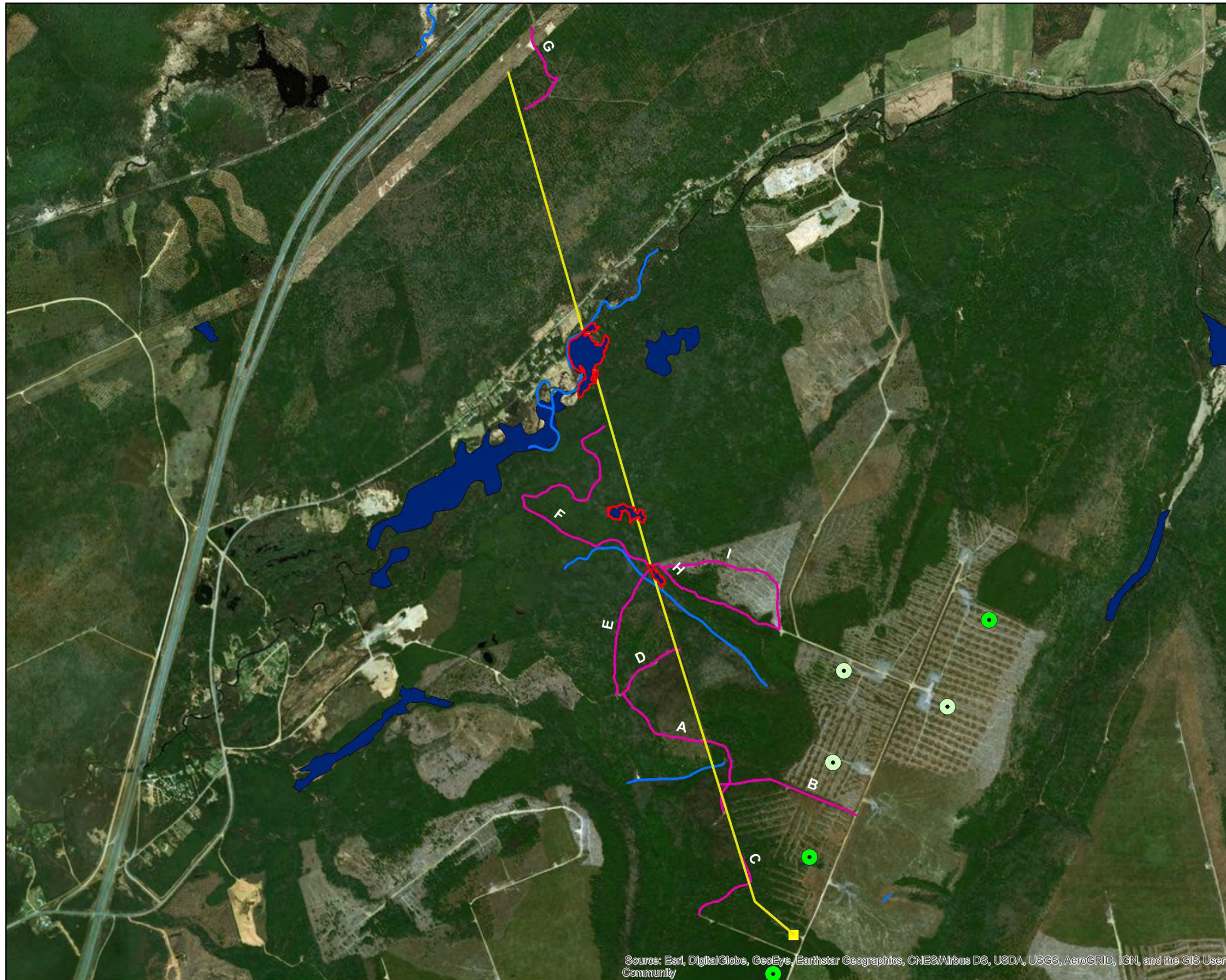
Metres

WGS 1984 Web Mercator Auxiliary Sphere

Production Date: Nov 15, 2018

Figure 1: All potential access routes into the proposed transmission line for installation.





Wocawson Energy Project

---

**Wetlands and Watercourses Along Access Routes**

---

Legend

- Proposed Phase 1 Turbines
- Proposed Phase 1 Alternate Turbines
- Substation
- Transmission Line
- Potential Access Routes
- Watercourses
- Mapped Wetlands
- Unmapped Delineated Wetlands

N

1:30,000

0 600 1,200 1,800

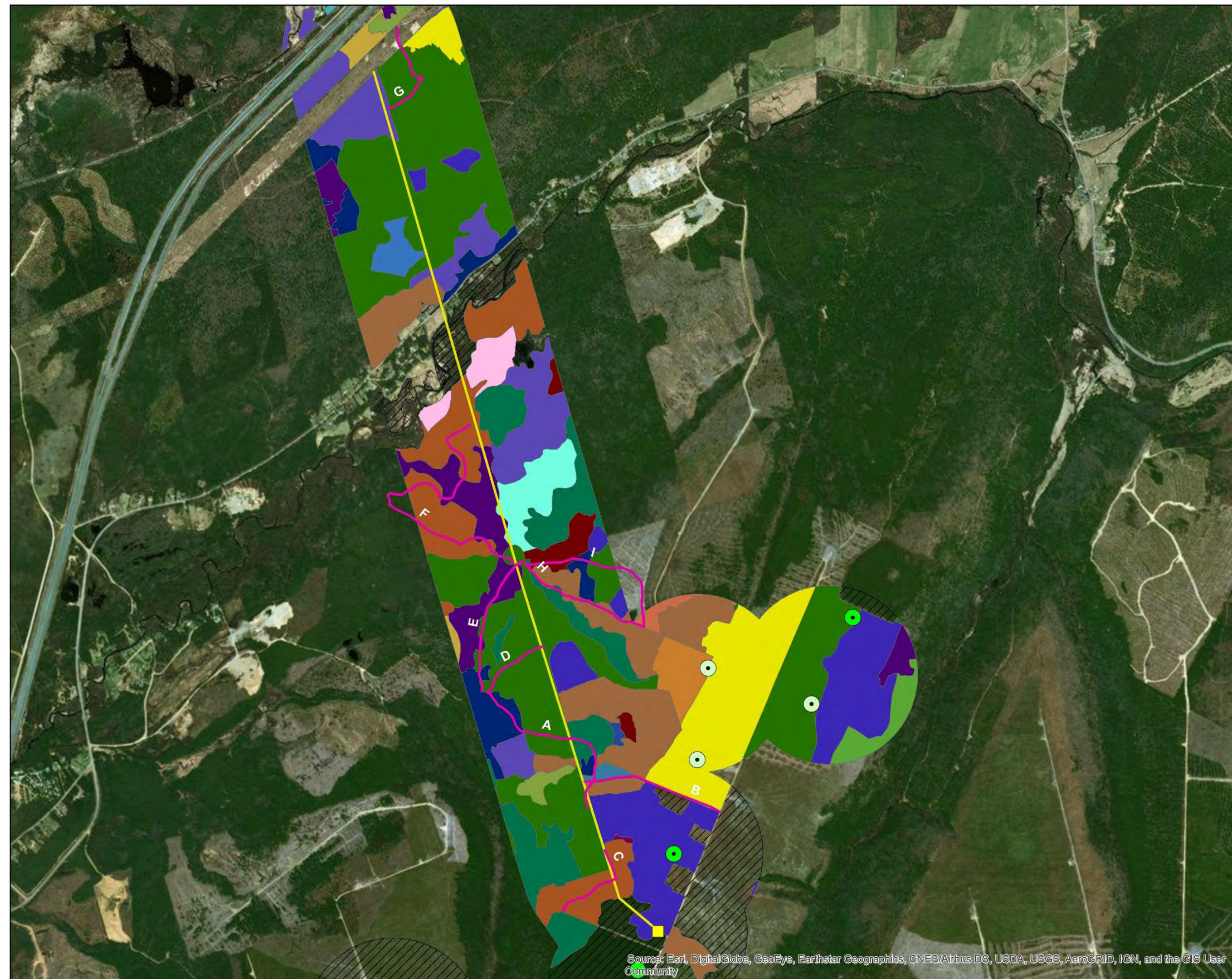
Metres

WGS 1984 Web Mercator Auxiliary Sphere

Production Date: Nov 15, 2018

Figure 2: Wetlands and watercourses along the potential access routes into the transmission line.





Wocawson Energy Project

---

**Access Route Vegetation and Habitat**

---

**Legend**

- Proposed Phase 1 Turbines
- Proposed Phase 1 Alternate Turbines
- Substation
- Proposed Access Routes
- Transmission Line

**Habitat Types (GeoNB Forest Layer)**

- Not Specified
- SW cover type balsam fir spruce
- HW cover type birch hardwood
- MW cover type birch mixedwood
- SW cover type black spruce balsam fir
- SW cover type eastern cedar softwood
- HW cover type intolerant hardwood
- MW cover type intolerant mixedwood
- SW cover type intolerant softwood
- SW cover type jack pine softwood
- MW cover type pine mixedwood
- HW cover type poplar hardwood
- MW cover type poplar mixedwood
- MW cover type red maple mixedwood
- SW cover type red pine softwood
- SW cover type red spruce balsam fir
- MW cover type red spruce mixedwood
- SW cover type red spruce
- SW cover type spruce fir
- MW cover type spruce mixedwood
- SW cover type spruce
- HW cover type tolerant - mid-tolerant hardwood
- HW cover type tolerant - intolerant hardwood
- SW cover type tamarack larch softwood
- HW cover type tolerant hardwood
- MW cover type tolerant mixedwood
- SW cover type tolerant softwood
- SW cover type white pine softwood
- SW cover type white spruce

N

1:30,000

0      600      1,200      1,800  
Metres

WGS 1984 Web Mercator Auxiliary Sphere

Production Date: Nov 15, 2018

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 3: Habitat types along all potential access routes into the transmission line.



**Appendix A**  
**Wetland and Watercourse Survey**



**DILLON**  
CONSULTING

WOCAWSON ENERGY PROJECT

# Addendum to Aquatic Habitat and Wetlands Summary Report (Final)

Proposed Access Trail Upgrades





# Table of Contents

---

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
<b>2.0</b>	<b>Scope of Work and Methodology</b>	<b>1</b>
<b>3.0</b>	<b>Aquatic Habitat and Wetland Assessment Results</b>	<b>2</b>
3.1	Watercourse Assessment Results .....	2
3.2	Wetland Assessment Results .....	5
3.2.1	Wetland 1 – Treed Swamp .....	5
<b>4.0</b>	<b>Summary and Conclusion</b>	<b>5</b>
<b>5.0</b>	<b>Closure</b>	<b>6</b>
<b>Figures</b>		
Figure 1: Proposed Access Trails - Assessed Watercourses .....		4
<b>Tables</b>		
Table 1: Watercourse Summary – Access Trails .....		3
Table 2: Summary of Field Identified Wetlands .....		5
<b>Appendices</b>		
A	Additional Site Photographs	
<b>References</b>		



## 1.0 Introduction

---

Dillon Consulting Limited (Dillon) was retained by the Wocawson Energy Limited Partnership (Wocawson) to complete natural environment surveys for proposed access trail upgrades in support of a future provincial registration of an Environmental Impact Assessment (EIA) for the Wocawson Energy Project (WEP). The project consists of the construction and operation of 6-12 wind turbines generating between 20-40 MW of electricity, an on-site substation, and a transmission line connecting the project to the New Brunswick electrical grid, to be located on a parcel of Crown land near Penobsquis, New Brunswick.

Dillon conducted field surveys throughout the summer of 2018 for the proposed turbine locations as well as the proposed transmission line connecting the project to the existing electrical grid. The results of those surveys (for vegetation, aquatic habitats and wetlands, birds, bats, and wildlife and wildlife habitat) were documented in standalone reports submitted to Wocawson in support of their preparation of an EIA registration for the proposed project. Following those surveys, additional areas were identified for potential access to the proposed transmission line corridor that required assessment. Thus, additional surveys were conducted of those access areas, and the results are documented in several addenda to those reports; such as this addendum to the Aquatic Habitats and Wetlands Summary Report (Dillon 2018a). It is intended that these addenda would be appended to the respective summary reports for each of the above disciplines. The addenda for each discipline should thus be read in conjunction with the corresponding Summary Report.

To access the proposed WEP transmission line, New Brunswick Power Corporation (NB Power) requires that access trails present within the proposed project area be widened and upgraded to conditions that allow access of infrastructure and heavy equipment/vehicles. This addendum provides a summary of the aquatic habitat and wetland surveys conducted along the proposed access trail upgrades in support of the Wocawson Energy Project EIA registration, and includes a brief description of the scope of work/methodology used and a summary of the survey results.

Though the terrestrial environment generally includes vegetation, wetlands, wildlife, wildlife habitat, and species at risk/species of conservation concern, the focus of this report is on aquatic habitat and wetlands, as an updated appendix to the Dillon report titled “Wocawson Energy Project Aquatic Habitats and Wetlands Summary Report” (Dillon 2018a).

## 2.0 Scope of Work and Methodology

---

The scope of work for this additional aquatic habitat and wetland assessment for the proposed access trail upgrade included completing surveys for 7.8 km of trail within the proposed project area (i.e., the



“study area” referred to throughout this addendum). The 9 access trails (i.e., the study area) are presented on **Figure 1**, and are identified through unique identifiers (i.e., Trails A – I).

The field surveys were conducted by Dillon biologists on August 22, 23, and 24, 2018. The specific survey methods as well as the rationale behind the selection of aquatic habitats and wetlands as a valued component of the environment in relation to the project can be referenced within the main aquatic habitat and wetlands summary report (“*Wocawson Energy Project Aquatic Habitat and Wetlands Summary Report*” [Dillon 2018a]).

## 3.0 Aquatic Habitat and Wetland Assessment Results

The access trails extend through several habitat types (refer to the addendum report titled “Addendum to Wildlife and Wildlife Habitat Summary Report [Dillon 2018b]”; including areas of relatively mature hardwood and softwood forest stands. There were no new watercourses or wetlands identified during the trail surveys, although additional sections of the watercourses previously identified during the assessment of the proposed transmission line corridor were assessed at crossing locations observed on the trails (Refer to Dillon [2018a] for full watercourse descriptions).

### 3.1 Watercourse Assessment Results

The results of the additional survey effort for watercourse crossings located along the 7.8 km of proposed trail upgrades are presented within the following sections.

In total, 2 watercourse crossings were identified during the assessment of the access trails. The following previously identified watercourses were observed within the study area crossing the access trails (full details of each watercourse are provided in Dillon [2018a]).

- **Unnamed Tributary - Watercourse 2 (WC 2)**

***Associated with Trails E, F and H***

WC 2 is a mapped watercourse that was previously characterized during the initial field surveys (July 2018) as a small stream with a defined channel through an unmapped field-identified wetland (i.e. Wetland 1; refer to wetland results in *Section 3.4 of “Wocawson Energy Project Aquatic Habitats and Wetlands Summary Report”* (Dillon 2018a). During the assessment of Trails E and H, it was determined that WC 2 drains out of Wetland 1 with a defined channel connecting downstream to Wetland 2 (refer to **Figure 1**). At the crossing location (where Trail E and Trail H converge), WC 2 has a wetted width of 1.08 m with dominant substrate of small gravel, sand and fine sediments. The habitat is predominantly run with occasional small riffles. The bank vegetation was sparse, consisting of mainly of bare ground, grasses and small herbaceous plants. At the crossing location, there is a small rudimentary wooden bridge



constructed for ATV crossing (**Photo 1**). Downstream of the Trail F crossing, the channel becomes occasionally braided with increased fine sediment before connecting to Wetland 2. WC2 is considered to be fish habitat, and an unidentified fish was observed during the initial (July 2018) surveys.



- **Unnamed Tributary - Watercourse 3 (WC3)**

**Associated with Trail F**

WC3 is an unmapped watercourse that was characterized during initial field survey as an intermittent stream with a poorly defined channel associated with an unmapped field-identified wetland (i.e. Wetland 2; refer to wetland results in *Section 3.4 of*). During the access trail surveys, it was determined that WC3 flows out of Wetland 2 and crosses Trail F at some point downstream of Wetland 2. At the trail crossing location, the watercourse has a wetted width of 0.85 m with dominant substrate of rubble and gravel. The bank vegetation consisted of grasses and small herbaceous plants. Fish were not observed in WC3 during the field survey, although it may provide potential fish habitat.

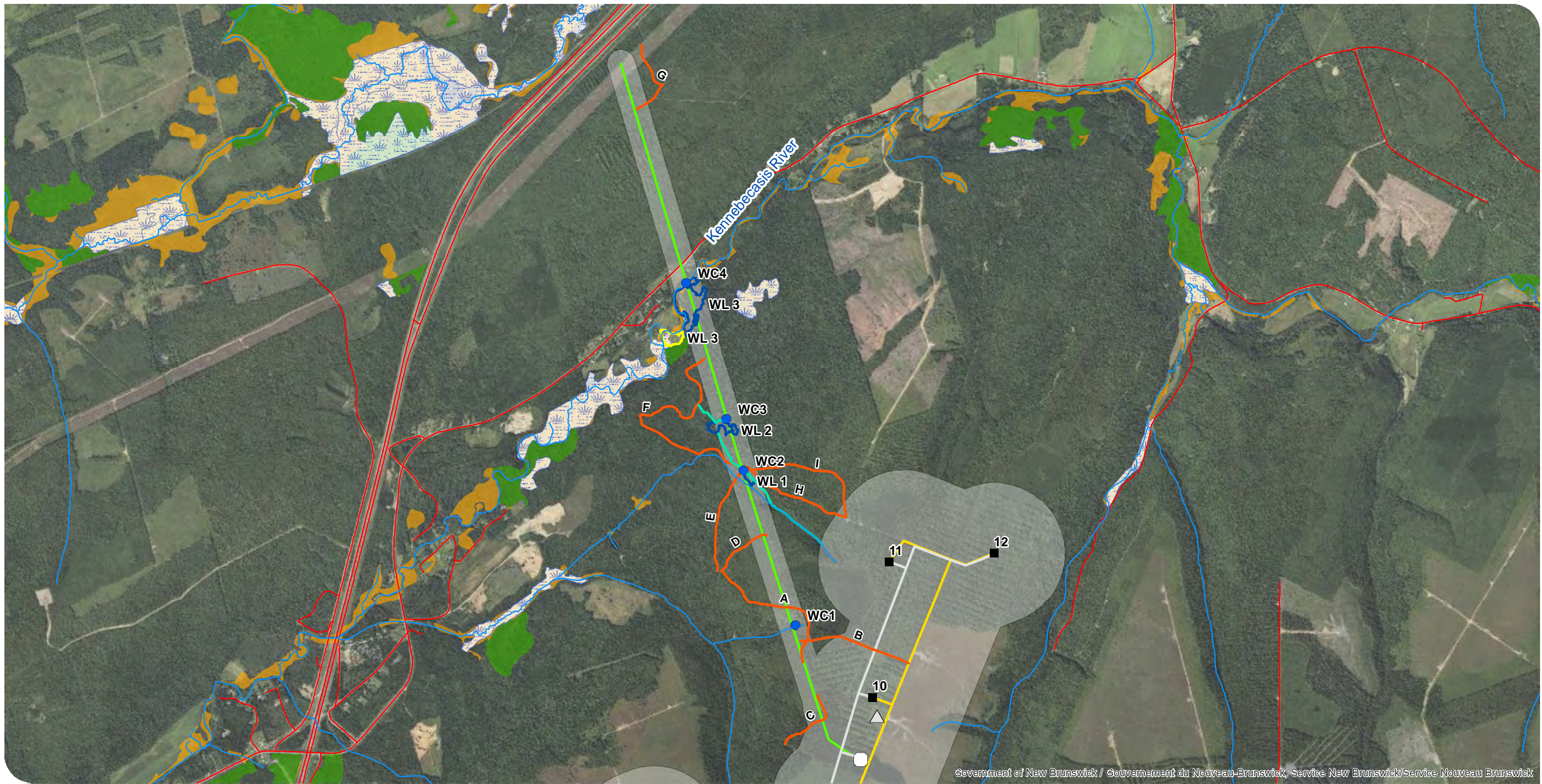
Although they were dry at the time of the field assessment, access trails H and I showed evidence of (at times) considerable runoff affecting the steeper sections of trail (see additional site photos, **Photo 3**). Refer to **Table 1** for additional watercourse details/descriptions.

**Table 1: Watercourse Summary – Access Trails**

Watercourse ID	Representative Photo	Dominant Aquatic Habitat Type and Other Observations
WC2 crossing at Trail F		<p><b>Wetted Width:</b> 1.08 m  <b>Dominant Habitat:</b> Run with small riffles  <b>Dominant Substrate:</b> 60 % gravel, 25 % sand and 15 % fines  <b>Fish Habitat Suitability:</b> Small watercourse with potential fish habitat                      Fish were observed during the field survey  <b>Wetland Association:</b> Wetland 1 and 2</p>
WC3 crossing at Trail F		<p><b>Wetted Width:</b> 0.85 m  <b>Dominant Habitat:</b> Run with small riffles  <b>Dominant Substrate:</b> 55 % rubble, 40% gravel, and 5 % sand  <b>Fish Habitat Suitability:</b> Small watercourse with potential fish habitat  <b>Wetland Association:</b> Wetland 2</p>

It should be noted that the technique of backpack electrofishing was considered as a method for conducting fish presence or absence surveys, but was not conducted during the field studies due to the breadth of available literature (i.e., extensive aquatic studies conducted in areas surrounding the





Government of New Brunswick / Gouvernement du Nouveau-Brunswick, Service New Brunswick/Service Nouveau Brunswick

**NATURAL FORCES INC**  
Wocawson Energy Project

**Proposed Access Trail**  
**Assessed Watercourses**  
FIGURE 1



- |                              |                         |                              |   |  |
|------------------------------|-------------------------|------------------------------|---|--|
| ● Watercourse Crossing       | — Assessed Watercourses | — Proposed Transmission Line | ▨ Regulated Wetlands                        | <b>NBDELG Draft Beta Wetland Mapping (unregulated)</b> |
| ■ Proposed Turbine Locations | — Proposed Access       | — Watercourses               | ▭ Delineated Wetlands                       | ■ Provincially Significant Wetlands                    |
| ○ Proposed Substation        | — Proposed Road Upgrade | — Roads                      | ▭ Inferred Wetlands Based on Aerial Imagery | ■ Intermediate Wetlands                                |
| △ Met Tower                  | — Proposed Collector    | □ Assessment Area            |   | ■ Forested Wetlands                                    |



MAP DRAWING INFORMATION:  
DATA PROVIDED BY NBDELD  
  
MAP CREATED BY: SCN  
MAP CHECKED BY: ACS  
MAP PROJECTION: NAD 1983 CSRS New Brunswick Stereographic

0 250 500 1,000 Meters  
SCALE 1:26,000



FILE LOCATION: G:\186975\_SUSSEX EAST\SUSSEX EAST WIND PROJECT\MAPS FOR REPORT\WETLANDS WITH NEW WATERCOURSES SEPT 6 2018.MXD

PROJECT: 18-6975 STATUS: FINAL DATE: 2018-09-14



proposed project by both the Canadian Rivers Institute (CRI 2015) and Kennebecasis Watershed Restoration Committee (KWRC 2018)). A summary of the fish species that have been historically documented to be present within the Kennebecasis River and its watershed is provided in Section 3.2 of “*Wocawson Energy Project Aquatic Habitats and Wetlands Summary Report*” (Dillon 2018a).

### 3.2 Wetland Assessment Results

There are no mapped wetlands on the GeoNB mapping layer that would intersect with any portion of the proposed project area or study area for the proposed access trails for the project. Further, there were no new wetlands identified during the field surveys of the proposed access trails, although it was determined that Trail E and Trail H cross through Wetland 1 which was assessed during the initial field surveys (Refer to *Wocawson Energy Project Aquatic Habitat and Wetlands Summary Report*” (Dillon 2018a) for full description and mapped delineations and functional assessments of the field identified wetlands). **Table 2** below, provides a brief summary of Wetland 1 which is intersected by access Trails E and H, as was provided in Dillon (2015a).

**Table 2: Summary of Field Identified Wetlands**

Wetland ID	Wetland Area <sup>1</sup> (ha)	Location	Wetland Type	Key Ecological Functions <sup>2</sup>
Wetland 1	0.38	Trail E and H	Treed Swamp	Organic nutrient export, waterbird feeding habitat, songbird, raptor and mammal habitat, and pollinator habitat

Notes:

1. The wetland area provided in this table is the surface area of the field identified wetland that is encompassed within the study area only (i.e., the surface area of the portion of each wetland that intersects the study area, not the entire area of the wetland).
2. Key ecological functions were rated as ‘higher’ functions during the functional assessment.

#### 3.2.1 Wetland 1 – Treed Swamp

Wetland 1 is characterized as a 0.38 ha throughflow wetland of natural origin on a terrene slope that is seasonally flooded and permanently saturated.

Pre-existing anthropogenic effects which were previously identified included adjacent clear cutting, former herbicide use, logging road and ATV/snowmobile trail development.

## 4.0 Summary and Conclusion

This addendum report summarizing aquatic habitat and wetland surveys has been prepared for the proposed access trail upgrades in support of the Wocawson Energy Project.

The information provided in this document is based on the current available design/planning information and existing environment information obtained during focused field surveys conducted in August 2018.



## 5.0 Closure

---

This report was prepared by Dillon Consulting Limited (Dillon) on behalf of the Wocawson Energy Limited Partnership, in support of the Wocawson Energy Project EIA. Dillon has used the degree of care and skill ordinarily exercised under similar circumstances at the time the work was performed by reputable members of the environmental consulting profession practicing in Canada. Dillon assumes no responsibility for conditions which were beyond its scope of work. There is no warranty expressed or implied by Dillon.

The material in the report reflects Dillon's best judgment in light of the information available to Dillon at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Yours truly,

**DILLON CONSULTING LIMITED**



Kristin Banks, P.Eng.  
Project Manager

## Appendix A

### *Additional Site Photographs*





**Photo 1:** Existing wooden bridge on Trail E/Trail H at Watercourse 2 crossing location.



**Photo 2:** Existing wooden bridge on Trail F at Watercourse 3 crossing location.



**Photo 3:** Example of damage from drainage down steep section of Trail I.



## References

---

CRI (Canadian Rivers Institute). 2015. Surface Water Monitoring Program – Kennebecasis Watershed. Available at: <http://canadarivers-gis.maps.arcgis.com/apps/MapJournal/index.html?appid=9f4016833d4e47c8b58a9d33a1867925#> Accessed June 2018.

Dillon (Dillon Consulting Limited). 2018a. Aquatic Habitats and Wetlands Summary Report. Prepared for the Wocawson Project Limited Partnership by Dillon Consulting Limited, Fredericton, NB.

Dillon (Dillon Consulting Limited). 2018b. Wildlife and Wildlife Habitat Summary Report. Prepared for the Wocawson Project Limited Partnership by Dillon Consulting Limited, Fredericton, NB.

KWRC (Kennebecasis Watershed Restoration Committee). 2018. Kennebecasis Watershed Restoration Committee Website – About Us. Available at: <https://www.kennebecasisriver.org/>. Accessed July 2018.

Natural Forces. 2018. Wocawson Energy Project – Project Description.

## **Appendix B**

### **Wildlife and Wildlife Habitat Survey**





**DILLON**  
CONSULTING

WOCAWSON ENERGY PROJECT

# Addendum to Wildlife and Wildlife Habitat Summary Report (Final)

Proposed Access Trail Upgrades



# Table of Contents

---

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
<b>2.0</b>	<b>Wildlife and Wildlife Habitat Surveys Scope and Methodology</b>	<b>1</b>
<b>3.0</b>	<b>Wildlife and Wildlife Habitat Survey Results</b>	<b>2</b>
3.1	Wildlife Observations.....	6
3.1.1	Information from Desktop Review.....	6
3.1.2	Wildlife Observations.....	6
<b>4.0</b>	<b>Summary and Conclusion</b>	<b>6</b>
<b>5.0</b>	<b>Closure</b>	<b>7</b>

## Figures

---

Figure 1: Wocawson Energy Wind Project Proposed Access Trail Upgrade Terrestrial Habitat Types .....	5
--	---

## Tables

---

Table 1: Terrestrial Habitat Types within the Proposed Turbine Locations.....	2
---	---

## References

---



## 1.0 Introduction

---

Dillon Consulting Limited (Dillon) was retained by the Wocawson Energy Limited Partnership to complete natural environment surveys for proposed access trail upgrades in support of a future provincial registration of an Environmental Impact Assessment (EIA) for the Wocawson Energy Project (WEP). The project consists of the construction and operation of 6-12 wind turbines generating between 20-40 MW of electricity, an on-site substation, and a transmission line connecting the project to the New Brunswick electrical grid, to be located on a parcel of Crown land near Penobsquis, New Brunswick.

Dillon had conducted field surveys throughout the summer of 2018 for the proposed turbine locations as well as the proposed transmission line connecting the project to the existing electrical grid. The results of those surveys (vegetation, aquatic habitats, birds, bats, and wildlife and wildlife habitat) were documented in standalone reports submitted to Wocawson in support of their preparation of an EIA registration for the proposed project. Since those surveys were conducted, additional areas were identified to access the proposed transmission line corridor that required assessment. Thus, additional surveys were conducted of those access areas and the results are documented in several addenda to those reports, such as this addendum to the Wildlife and Wildlife Habitat Summary Report (Dillon 2018a). It is intended that these addenda would be appended to the respective summary reports for each of the above disciplines. The addenda for each discipline should thus be read in conjunction with the corresponding Summary Report.

To access the proposed WEP transmission line, New Brunswick Power Corporation (NB Power) requires that access trails present within the proposed project area be widened and upgraded to conditions that allow access of infrastructure and heavy equipment/vehicles. This addendum provides a summary of the wildlife and wildlife habitat surveys conducted along the proposed access trail upgrades in support of the Wocawson Energy Project EIA registration, and includes a brief description of the scope of work/methodology used and a summary of the survey results.

Though the terrestrial environment generally includes vegetation, wetlands, wildlife, wildlife habitat, and species at risk/species of conservation concern, the focus of this report is on wildlife and wildlife habitat, as an updated appendix to the Dillon report titled “Wocawson Energy Project Wildlife and Wildlife Habitat Summary Report” (Dillon 2018).

## 2.0 Wildlife and Wildlife Habitat Surveys Scope and Methodology

---



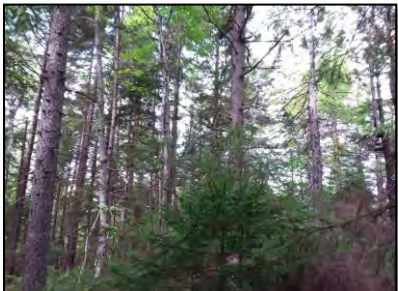
The scope of work for this additional field survey effort for the proposed access trail upgrade included completing wildlife and wildlife habitat surveys through incidental observations of wildlife and observations of available wildlife habitat. The field studies were completed along 7.8 km of trail within

the proposed project area (i.e. the study area referred to throughout this report). The field surveys were conducted by Dillon biologists on August 22, 23 and 24, 2018. The specific survey methods as well as the rationale behind the selection of wildlife and wildlife habitat as a valued component of the environment in relation to the project can be referenced within the main vegetation summary report (“Wocawson Energy Project Wildlife and Wildlife Habitat Summary Report” [Dillon 2018]).





## 3.0 Wildlife and Wildlife Habitat Survey Results

The access trails extend through several habitat types, including areas of relatively mature hardwood and softwood forest stands. The access trails (i.e. the study area) are identified through unique identifiers (i.e. Trails A – I). A summary of the representative habitat types observed along each access trail are presented below in **Table 1**, and on **Figure 1**.

**Table 1: Terrestrial Habitat Types within the Proposed Turbine Locations**

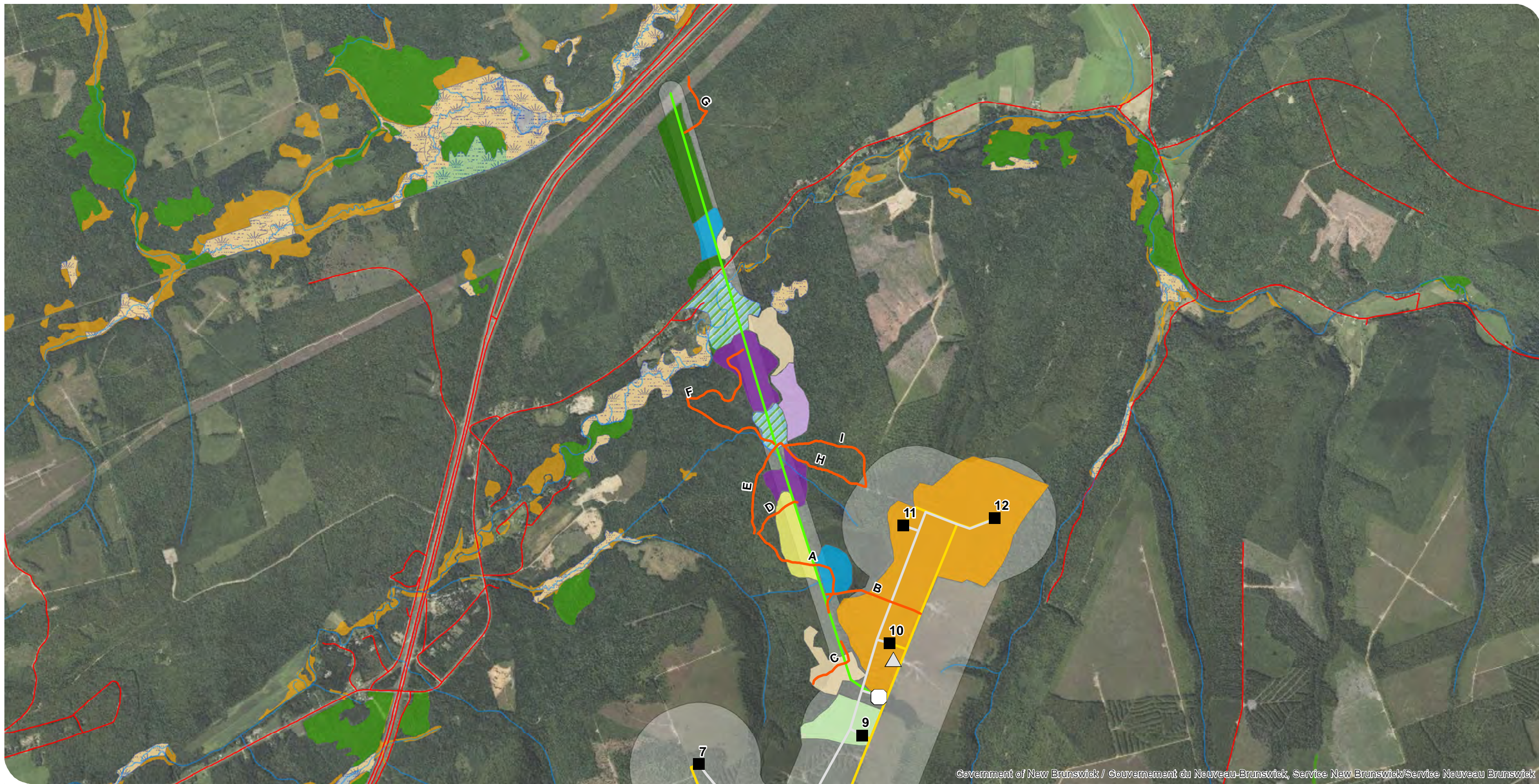
Trail	Representative Photo	Dominant Habitat Type
A		<p><b>Young hardwood forest adjacent to watercourse</b> – cutover in last 20 years (elements of older softwood retention). Dominant species include red maple (<i>Acer rubrum</i>), white birch (<i>Betula papyrifera</i>), yellow birch (<i>Betula allegheniensis</i>), eastern hemlock (<i>Tsuga canadensis</i>), and white pine (<i>Pinus strobus</i>).</p>
B		<p><b>Immature to mature hardwood forest</b> – Dominant species include American beech (<i>Fagus grandifolia</i>), sugar maple (<i>Acer saccharum</i>), white birch and red maple.</p>
		<p>Transitions to <b>mature conifer (softwood) forest</b> – Dominant species include red spruce (<i>Picea rubens</i>), balsam fir (<i>Abies balsamea</i>), sugar maple, red maple and eastern hemlock.</p>



Trail	Representative Photo	Dominant Habitat Type
C		<p><b>Recent clear cut</b> with white pine retention (past forest type unknown).</p>
D	 	<p><b>Immature hardwood forest</b> (approximately 20 years old) – Dominant species include American beach, yellow birch, sugar maple, and red maple.</p> <p>Transitions to <b>mature conifer (softwood) forest</b> – Dominant species include red spruce, eastern hemlock, with lesser hardwoods, including sugar maple and yellow birch.</p>
E		<p><b>Immature hardwood forest</b> – Dominant species include white birch, red maple, sugar maple, balsam fir, largetooth aspen (<i>Populus grandidentata</i>), and white pine.</p>

Trail	Representative Photo	Dominant Habitat Type
F		<p><b>Mature mixedwood forest</b> – dominant species include balsam fir, red maple, sugar maple, red spruce, white pine and largetooth aspen.</p> <p>Transitions to <b>mature conifer (softwood) dominated forest</b> – Dominant species include balsam fir, eastern hemlock, and white pine with lesser red maple and white birch.</p>
G		<p><b>Immature hardwood forest</b> – Dominant species include white birch, red maple, sugar maple, balsam fir, largetooth aspen and red oak (<i>Quercus rubra</i>).</p>
H		<p><b>Mature mixedwood forest adjacent to watercourse</b> – Dominant species include balsam fir, American beech, yellow birch red maple and white ash (<i>Fraxinus Americana</i>).</p>
I		<p><b>Recent clear cut</b> (past forest type unknown).</p>





Government of New Brunswick / Gouvernement du Nouveau-Brunswick, Service New Brunswick/Service Nouveau Brunswick

**NATURAL FORCES INC**  
Wocawson Energy Wind Project

**Proposed Access Trail Upgrade  
Terrestrial Habitat Types**

FIGURE 1



- Proposed Turbine Locations
- Proposed Substation
- △ Met Tower

- Proposed Road Upgrade
- Proposed Collector
- Proposed Transmission Line
- Watercourses

- Roads
- Proposed Access Trail
- Regulated Wetlands
- Assessment Area

- Terrestrial Habitats**
- Pre-Commercial Thinning
  - Clear Cut
  - Strip Cut

- Select Cut Mixedwood
- Immature Mixedwood
- Semi-Mature to Mature Mixedwood
- Softwood Plantation

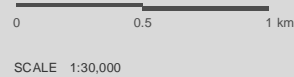
- Semi-Mature to Mature Softwood
- Semi-Mature to Mature Hardwood
- Pine Retention
- Potential Wetland

- NBDELG Draft Beta Wetland Mapping (unregulated)**
- Provincially Significant Wetlands
  - Intermediate Wetlands
  - Forested Wetlands



MAP DRAWING INFORMATION:  
DATA PROVIDED BY NBDERD

MAP CREATED BY: JNH  
MAP CHECKED BY: ACS  
MAP PROJECTION: NAD 1983 CSRS New Brunswick Stereographic



FILE LOCATION: G:\CAD\GIS\186975\_SUSSEX EAST\SUSSEX EAST WIND  
PROJECT\MAPS FOR REPORT\TERRESTRIAL HABITATS A JULY 10\_2018\_JNH

PROJECT: 18-6975 STATUS: DRAFT DATE: 2018-09-05



## 3.1 Wildlife Observations

---

### 3.1.1 Information from Desktop Review

---

As noted in Section 3.2 of the Dillon report titled “*Wocawson Energy Project Wildlife and Wildlife Habitat Summary Report*” (Dillon 2018), a custom Atlantic Canada Conservation Data Centre (AC CDC) data report was obtained for a 5 km radius around the proposed project area (AC CDC 2018). According to the AC CDC records review, there are no records of wildlife species of conservation concern or location sensitive species (excluding birds and bats) that have been historically observed within 5 km of the proposed project area. Birds and bats will be addressed in separate addenda to the main reports.

### 3.1.2 Wildlife Observations

---

Large and small mammals, including ungulates, are known to utilize trail and wood-road networks for travel. Evidence (i.e., tracks and scat) of white-tailed deer (*Odocoileus virginianus*), American moose (*Alces alces*), eastern coyote (*Canis latrans*), and snowshoe hare (*Lepus americanus*), were noted throughout the trails. No visual observations of wildlife species at risk or wildlife species of conservation were recorded during the field surveys. All the above species have populations in New Brunswick that are considered secure (AC CDC 2017).

## 4.0 Summary and Conclusion

---

This addendum report summarizing wildlife and wildlife habitat surveys has been prepared for the proposed access trail upgrades in support of the Wocawson Energy Project.

The information provided in this document is based on the current available design/planning information and existing environment information obtained during focused field surveys conducted in August, 2018.



## 5.0 Closure

---

This report was prepared by Dillon Consulting Limited (Dillon) on behalf of the Wocawson Energy Limited Partnership, in support of the Wocawson Energy Project EIA. Dillon has used the degree of care and skill ordinarily exercised under similar circumstances at the time the work was performed by reputable members of the environmental consulting profession practicing in Canada. Dillon assumes no responsibility for conditions which were beyond its scope of work. There is no warranty expressed or implied by Dillon.

The material in the report reflects Dillon's best judgment in light of the information available to Dillon at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Yours truly,

**DILLON CONSULTING LIMITED**



**Kristin Banks, P.Eng.**

Project Manager

## References

---

AC CDC (Atlantic Canada Conservation Data Centre). 2017. Rarity ranks and legal status by province. Accessed at: <http://www.accdc.com/en/ranks.html>. (Accessed May 2018).

AC CDC (Atlantic Canada Conservation Data Centre). 2018. DATA REPORT 5782: Sussex East, NB. April 2018 Data Request.

Dillon (Dillon Consulting Limited). 2018. Wildlife and Wildlife Habitat Summary Report. Prepared for the Wocawson Project Limited Partnership by Dillon Consulting Limited, Fredericton, NB.



**Appendix C**  
**Vegetation Survey**



**DILLON**  
CONSULTING

WOCAWSON ENERGY PROJECT

# Addendum to Vegetation Summary Report (Final)

Proposed Access Trail Upgrades





# Table of Contents

---

<b>1.0</b>	<b>Introduction</b>	<b>1</b>
<b>2.0</b>	<b>Scope of Work and Methodology</b>	<b>2</b>
<b>3.0</b>	<b>Vegetation Survey Results</b>	<b>2</b>
<b>4.0</b>	<b>Summary and Conclusion</b>	<b>20</b>
<b>5.0</b>	<b>Closure</b>	<b>21</b>

## Figures

---

Figure 1: Wocawson Energy Project Proposed Access Trail Upgrade .....	3
---	---

## Tables

---

Table 1: Vegetation Species Identified Along Access Trail A .....	4
Table 2: Vegetation Species Identified Along Access Trail B .....	5
Table 3: Vegetation Species Identified Along Access Trail C .....	7
Table 4: Vegetation Species Identified Along Access Trail D .....	8
Table 5: Vegetation Species Identified Along Access Trail E .....	10
Table 6: Vegetation Species Identified Along Access Trail F .....	12
Table 7: Vegetation Species Identified Along Access Trail G .....	14
Table 8: Vegetation Species Identified Along Access Trail H .....	16
Table 9: Vegetation Species Identified Along Access Trail I .....	18

## References

---

## 1.0 Introduction

---

Dillon Consulting Limited (Dillon) was retained by the Wocawson Energy Limited Partnership to complete natural environment surveys for proposed access trail upgrades in support of a future provincial registration of an Environmental Impact Assessment (EIA) for the Wocawson Energy Project (WEP). The project consists of the construction and operation of 6-12 wind turbines generating between 20-40 MW of electricity, an on-site substation, and a transmission line connecting the project to the New Brunswick electrical grid, to be located on a parcel of Crown land near Penobsquis, New Brunswick.

Dillon had conducted field surveys throughout the summer of 2018 for the proposed turbine locations as well as the proposed transmission line connecting the project to the existing electrical grid. The results of those surveys (vegetation, aquatic habitats, birds, bats, and wildlife and wildlife habitat) were documented in standalone reports submitted to Wocawson in support of their preparation of an EIA registration for the proposed project. Since those surveys were conducted, additional areas were identified to access the proposed transmission line corridor that required assessment. Thus, additional surveys were conducted of those access areas and the results are documented in several addenda to those reports, such as this addendum to the Vegetation Summary Report (Dillon 2018a). It is intended that these addenda would be appended to the respective summary reports for each of the above disciplines. The addenda for each discipline should thus be read in conjunction with the corresponding Summary Report.

To access the proposed WEP transmission line, New Brunswick Power Corporation (NB Power) requires that access trails present within the proposed project area be widened and upgraded to conditions that allow access of infrastructure and heavy equipment/vehicles. This addendum provides a summary of the vegetation surveys conducted along the proposed access trail upgrades in support of the Wocawson Energy Project EIA registration, and includes a brief description of the scope of work/methodology used and a summary of the survey results.

Though the terrestrial environment generally includes vegetation, wetlands, wildlife, wildlife habitat, and species at risk/species of conservation concern, the focus of this report is on rare plants and baseline vegetation, as an updated appendix to the Dillon report titled “Wocawson Energy Project Vegetation Summary Report” (Dillon 2018a).



## 2.0 Scope of Work and Methodology

---

The scope of work for this additional vegetation assessment for the proposed access trail upgrade included completing baseline vegetation (vegetation species list) and rare plant surveys for 7.8 km of trail within the proposed project area (which constitute the “study area” referred to throughout this addendum). The field surveys were conducted by Dillon biologists on August 22, 23 and 24, 2018. The specific survey methods as well as the rationale behind the selection of vegetation as a valued component of the environment in relation to the project can be referenced within the main vegetation summary report (“*Wocawson Energy Project Vegetation Summary Report*” [Dillon 2018a]).

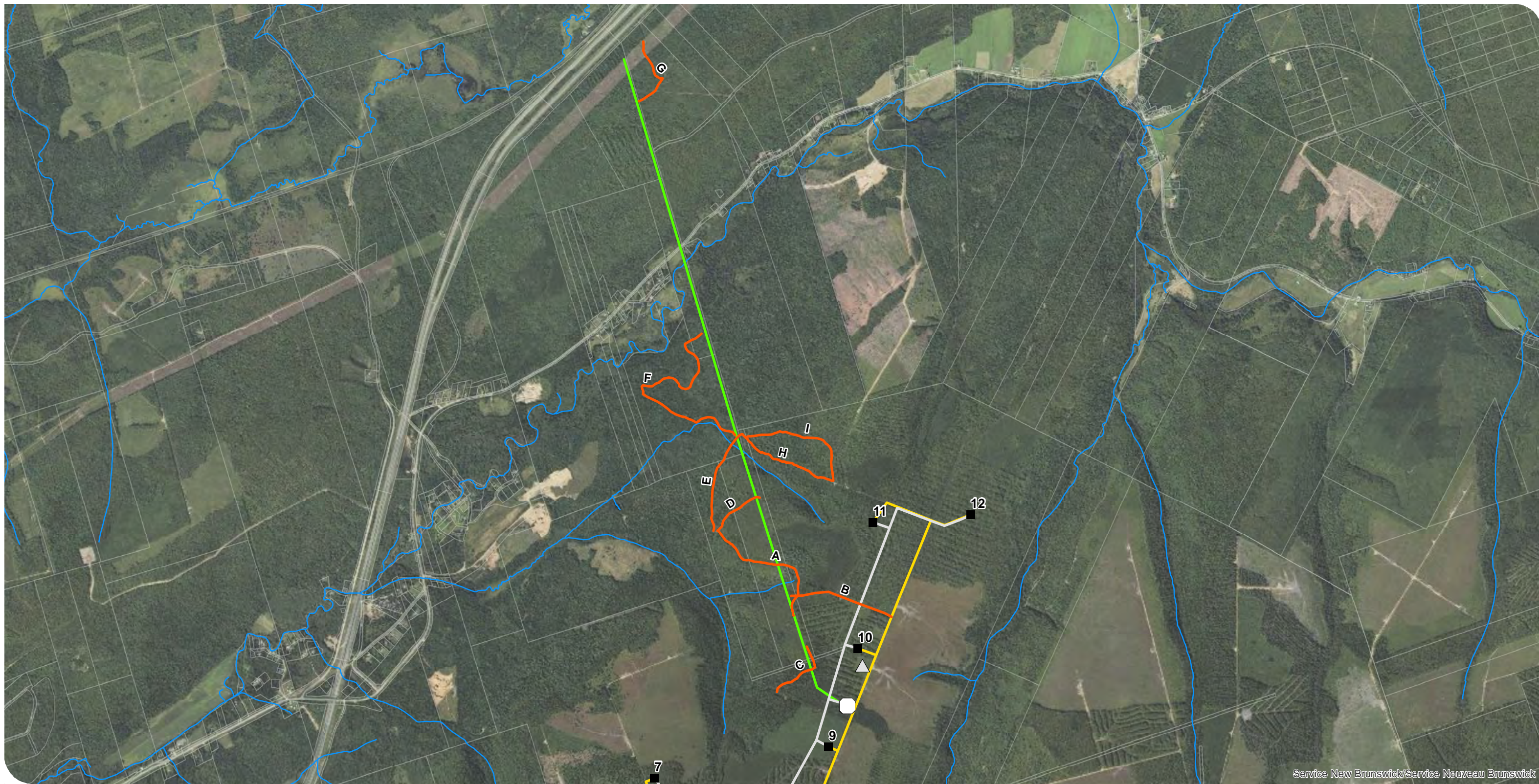
## 3.0 Vegetation Survey Results

---

The access trails extend through several habitat types (refer to the addendum report titled “Addendum to Wildlife and Wildlife Habitat Summary Report [Dillon 2018b]”, including areas of relatively mature hardwood and softwood forest stands. The access trails (i.e., the study area) are presented on **Figure 1**, and are identified through unique identifiers (i.e., Trails A – I).

A total of 168 vegetation species were observed within the study area during the field studies. The majority of the identified species were common and native to New Brunswick, and the remaining species included several identified non-native or exotic (SE) species. There were no species at risk, species of conservation concern or rare species identified within the study area during the field studies. Refer to **Tables 1 - 9** for the complete list of all plant species identified along each access trail.





Service New Brunswick/Service Nouveau Brunswick

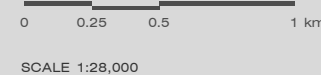
NATURAL FORCES INC  
Wocawson Energy Project

- Proposed Turbine Locations
- Proposed Substation
- △ Met Tower
- Proposed Road Upgrade
- Proposed Transmission Line
- Watercourses
- Proposed Collector
- Proposed Access Trail Upgrade
- PID

**Proposed Access Trail Upgrade**  
FIGURE 1



MAP DRAWING INFORMATION:  
DATA PROVIDED BY NBDERD  
MAP CREATED BY: JNH  
MAP CHECKED BY: ACS  
MAP PROJECTION: NAD 1983 CSRS New Brunswick Stereographic



FILE LOCATION: G:\CAD\GIS\186975\_SUSSEX EAST\SUSSEX EAST WIND PROJECT\MAPS FOR REPORT\SITE PLAN JULY 9 2018\_JNH

PROJECT: 18-6975 STATUS: FINAL DATE: 2018-09-06



Table 1: Vegetation Species Identified Along Access Trail A

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Rhus typhina</i>	Staghorn Sumac	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Hieracium aurantiacum</i>	Orange Hawkweed	SNA	7 Exotic
<i>Hieracium caespitosum</i>	Field Hawkweed	SNA	7 Exotic
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed	SNA	7 Exotic
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Betula alleghaniensis</i>	Yellow Birch	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Hypericum canadense</i>	Canada St John's-wort	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	4 Secure
<i>Viburnum nudum</i>	Northern Wild Raisin	S5	4 Secure
<i>Epigaea repens</i>	Trailing Arbutus	S5	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Polygonum cilinode</i>	Fringed Black Bindweed	S5	4 Secure
<i>Polygonum hydropiper</i>	Marshpepper Smartweed	SNA	7 Exotic
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Orthilia secunda</i>	One-sided Wintergreen	S5	4 Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	4 Secure
<i>Amelanchier spp.</i>			
<i>Potentilla norvegica</i>	Rough Cinquefoil	S5	4 Secure
<i>Prunus serotina</i>	Black Cherry	S5	4 Secure
<i>Prunus virginiana</i>	Chokecherry	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Salix spp.</i>			
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Viola spp.</i>			
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Picea rubens</i>	Red Spruce	S5	4 Secure
<i>Pinus strobus</i>	Eastern White Pine	S5	4 Secure
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	4 Secure
<i>Juncus bufonius</i>	Toad Rush	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Trillium erectum</i>	Red Trillium	S5	4 Secure
<i>Trillium undulatum</i>	Painted Trillium	S5	4 Secure
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure

Table 2: Vegetation Species Identified Along Access Trail B

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Acer saccharum</i>	Sugar Maple	S5	4 Secure
<i>Rhus typhina</i>	Staghorn Sumac	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Conyza canadensis</i>	Canada Horseweed	S5	4 Secure
<i>Doellingeria umbellata</i>	Hairy Flat-top White Aster	S5	4 Secure
<i>Hieracium aurantiacum</i>	Orange Hawkweed	SNA	7 Exotic
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed	SNA	7 Exotic



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Senecio jacobaea</i>	Tansy Ragwort	SNA	7 Exotic
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago canadensis</i>	Canada Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Betula papyrifera</i>	Paper Birch	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	4 Secure
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Fagus grandifolia</i>	American Beech	S4	4 Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Monotropa uniflora</i>	Indian Pipe	S5	4 Secure
<i>Chamerion angustifolium</i>	Fireweed	S5	4 Secure
<i>Oxalis montana</i>	Common Wood Sorrel	S5	4 Secure
<i>Oxalis stricta</i>	European Wood Sorrel	S5	4 Secure
<i>Polygonum cilinode</i>	Fringed Black Bindweed	S5	4 Secure
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Orthilia secunda</i>	One-sided Wintergreen	S5	4 Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	4 Secure
<i>Anemone quinquefolia</i>	Wood Anemone	S4	4 Secure
<i>Potentilla norvegica</i>	Rough Cinquefoil	S5	4 Secure
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	4 Secure
<i>Prunus pensylvanica</i>	Pin Cherry	S5	4 Secure
<i>Prunus serotina</i>	Black Cherry	S5	4 Secure
<i>Prunus virginiana</i>	Chokecherry	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Salix spp</i>			
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Viola spp.</i>			
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Picea rubens</i>	Red Spruce	S5	4 Secure
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	4 Secure
<i>Juncus bufonius</i>	Toad Rush	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Trillium undulatum</i>	Painted Trillium	S5	4 Secure
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	S5	4 Secure
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S5	4 Secure
<i>Onoclea sensibilis</i>	Sensitive Fern	S5	4 Secure
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5	4 Secure
<i>Lycopodium clavatum</i>	Running Clubmoss	S5	4 Secure
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure

Table 3: Vegetation Species Identified Along Access Trail C

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Conyza canadensis</i>	Canada Horseweed	S5	4 Secure
<i>Senecio jacobaea</i>	Tansy Ragwort	SNA	7 Exotic
<i>Senecio viscosus</i>	Sticky Ragwort	SNA	7 Exotic
<i>Senecio vulgaris</i>	Common Ragwort	SNA	7 Exotic
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Sonchus arvensis</i>	Field Sow Thistle	SNA	7 Exotic
<i>Sonchus oleraceus</i>	Common Sow Thistle	SNA	7 Exotic
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Tanacetum vulgare</i>	Common Tansy	SNA	7 Exotic
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Linnaea borealis</i>	Twinflower	S5	4 Secure
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Chamerion angustifolium</i>	Fireweed	S5	4 Secure
<i>Polygonum cilinode</i>	Fringed Black Bindweed	S5	4 Secure
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Prunus serotina</i>	Black Cherry	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus hispidus</i>	Bristly Dewberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure
<i>Salix spp.</i>	-	-	-
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Pinus strobus</i>	Eastern White Pine	S5	4 Secure
<i>Carex projecta</i>	Necklace Sedge	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure

Table 4: Vegetation Species Identified Along Access Trail D

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Acer saccharum</i>	Sugar Maple	S5	4 Secure
<i>Acer spicatum</i>	Mountain Maple	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	4 Secure
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5	4 Secure
<i>Hieracium aurantiacum</i>	Orange Hawkweed	SNA	7 Exotic

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed	SNA	7 Exotic
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Senecio jacobaea</i>	Tansy Ragwort	SNA	7 Exotic
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Betula alleghaniensis</i>	Yellow Birch	S5	4 Secure
<i>Corylus cornuta</i>	Beaked Hazel	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Linnaea borealis</i>	Twinflower	S5	4 Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	4 Secure
<i>Viburnum lantanoides</i>	Hobblebush	S5	4 Secure
<i>Epigaea repens</i>	Trailing Arbutus	S5	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure
<i>Kalmia angustifolia</i>	Sheep Laurel	S5	4 Secure
<i>Fagus grandifolia</i>	American Beech	S4	4 Secure
<i>Lycopus americanus</i>	American Water Horehound	S5	4 Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Monotropa uniflora</i>	Indian Pipe	S5	4 Secure
<i>Fraxinus americana</i>	White Ash	S4S5	4 Secure
<i>Circaea alpina</i>	Small Enchanter's Nightshade	S5	4 Secure
<i>Oxalis stricta</i>	European Wood Sorrel	S5	4 Secure
<i>Polygonum hydropiper</i>	Marshpepper Smartweed	SNA	7 Exotic
<i>Polygonum sagittatum</i>	Arrow-leaved Smartweed	S5	4 Secure
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Orthilia secunda</i>	One-sided Wintergreen	S5	4 Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	4 Secure
<i>Coptis trifolia</i>	Goldthread	S5	4 Secure
<i>Fragaria vesca</i>	Woodland Strawberry	S4	4 Secure
<i>Fragaria virginiana</i>	Wild Strawberry	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Potentilla norvegica</i>	Rough Cinquefoil	S5	4 Secure
<i>Prunus serotina</i>	Black Cherry	S5	4 Secure
<i>Prunus virginiana</i>	Chokecherry	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus hispidus</i>	Bristly Dewberry	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Salix spp.</i>	-	-	-
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Viola spp.</i>	-	-	-
<i>Thuja occidentalis</i>	Eastern White Cedar	S5	4 Secure
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Picea rubens</i>	Red Spruce	S5	4 Secure
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	4 Secure
<i>Juncus bufonius</i>	Toad Rush	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Medeola virginiana</i>	Indian Cucumber Root	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Trillium undulatum</i>	Painted Trillium	S5	4 Secure
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5	4 Secure
<i>Calamagrostis canadensis</i>	Bluejoint Reed Grass	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Glyceria striata</i>	Fowl Manna Grass	S5	4 Secure
<i>Dennstaedtia punctilobula</i>	Eastern Hay-Scented Fern	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris cristata</i>	Crested Wood Fern	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure
<i>Phegopteris connectilis</i>	Northern Beech Fern	S5	4 Secure
<i>Thelypteris noveboracensis</i>	New York Fern	S5	4 Secure

Table 5: Vegetation Species Identified Along Access Trail E

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	4 Secure
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5	4 Secure
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago canadensis</i>	Canada Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure
<i>Symphyotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Linnaea borealis</i>	Twinflower	S5	4 Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	4 Secure
<i>Epigaea repens</i>	Trailing Arbutus	S5	4 Secure
<i>Kalmia angustifolia</i>	Sheep Laurel	S5	4 Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Oenothera biennis</i>	Common Evening Primrose	S5	4 Secure
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Coptis trifolia</i>	Goldthread	S5	4 Secure
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Sorbus americana</i>	American Mountain Ash	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Salix spp.</i>	-	-	-
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Viola spp.</i>	-	-	-
<i>Juncus bufonius</i>	Toad Rush	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Medeola virginiana</i>	Indian Cucumber Root	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure

Table 6: Vegetation Species Identified Along Access Trail F

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Acer saccharum</i>	Sugar Maple	S5	4 Secure
<i>Acer spicatum</i>	Mountain Maple	S5	4 Secure
<i>Toxicodendron rydbergii</i>	Northern Poison Oak	S5	4 Secure
<i>Hydrocotyle americana</i>	American Marsh Pennywort	S5	4 Secure
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	S5	4 Secure
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	4 Secure
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Impatiens capensis</i>	Spotted Jewelweed	S5	4 Secure
<i>Corylus cornuta</i>	Beaked Hazel	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Hypericum canadense</i>	Canada St John's-wort	S5	4 Secure
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Cornus sericea</i>	Red Osier Dogwood	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Linnaea borealis</i>	Twinflower	S5	4 Secure
<i>Lonicera canadensis</i>	Canada Fly Honeysuckle	S5	4 Secure
<i>Sambucus nigra</i>	Black Elderberry	S5	4 Secure
<i>Viburnum lantanoides</i>	Hobblebush	S5	4 Secure
<i>Viburnum nudum</i>	Northern Wild Raisin	S5	4 Secure
<i>Epigaea repens</i>	Trailing Arbutus	S5	4 Secure
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Erodium cicutarium</i>	Common Stork's-bill	SNA	7 Exotic
<i>Ribes lacustre</i>	Bristly Black Currant	S5	4 Secure
<i>Lycopus americanus</i>	American Water Horehound	S5	4 Secure
<i>Mentha arvensis</i>	Wild Mint	S5	4 Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Circaea alpina</i>	Small Enchanter's Nightshade	S5	4 Secure
<i>Ludwigia palustris</i>	Marsh Seedbox	S4	4 Secure
<i>Oxalis montana</i>	Common Wood Sorrel	S5	4 Secure
<i>Polygonum hydropiper</i>	Marshpepper Smartweed	SNA	7 Exotic
<i>Polygonum hydropiperoides</i>	False Waterpepper	S4	4 Secure
<i>Polygonum sagittatum</i>	Arrow-leaved Smartweed	S5	4 Secure
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Orthilia secunda</i>	One-sided Wintergreen	S5	4 Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	4 Secure
<i>Actaea rubra</i>	Red Baneberry	S5	4 Secure
<i>Coptis trifolia</i>	Goldthread	S5	4 Secure
<i>Geum canadense</i>	White Avens	S5	4 Secure
<i>Geum macrophyllum</i>	Large-Leaved Avens	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus hispidus</i>	Bristly Dewberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Galium palustre</i>	Common Marsh Bedstraw	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure
<i>Chrysosplenium americanum</i>	American Golden Saxifrage	S5	4 Secure
<i>Mitella nuda</i>	Naked Bishop's-Cap	S5	4 Secure
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Thuja occidentalis</i>	Eastern White Cedar	S5	4 Secure
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Picea rubens</i>	Red Spruce	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Pinus banksiana</i>	Jack Pine	S5	4 Secure
<i>Pinus strobus</i>	Eastern White Pine	S5	4 Secure
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	4 Secure
<i>Carex gynandra</i>	Nodding Sedge	S5	4 Secure
<i>Carex nigra</i>	Smooth Black Sedge	S4S5	4 Secure
<i>Carex projecta</i>	Necklace Sedge	S5	4 Secure
<i>Carex scoparia</i>	Broom Sedge	S5	4 Secure
<i>Scirpus atrocinctus</i>	Black-girdled Bulrush	S5	4 Secure
<i>Scirpus cyperinus</i>	Common Woolly Bulrush	S5	4 Secure
<i>Iris versicolor</i>	Harlequin Blue Flag	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Trillium undulatum</i>	Painted Trillium	S5	4 Secure
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5	4 Secure
<i>Calamagrostis canadensis</i>	Bluejoint Reed Grass	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Glyceria canadensis</i>	Canada Manna Grass	S5	4 Secure
<i>Glyceria striata</i>	Fowl Manna Grass	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris cristata</i>	Crested Wood Fern	S5	4 Secure
<i>Gymnocarpium dryopteris</i>	Common Oak Fern	S5	4 Secure
<i>Onoclea sensibilis</i>	Sensitive Fern	S5	4 Secure
<i>Lycopodium annotinum</i>	Stiff Clubmoss	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure
<i>Phegopteris connectilis</i>	Northern Beech Fern	S5	4 Secure

Table 7: Vegetation Species Identified Along Access Trail G

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer rubrum</i>	Red Maple	S5	4 Secure
<i>Apocynum androsaemifolium</i>	Spreading Dogbane	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Doellingeria umbellata</i>	Hairy Flat-top White Aster	S5	4 Secure
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5	4 Secure
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago canadensis</i>	Canada Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Alnus incana</i>	Speckled Alder	S5	4 Secure
<i>Betula alleghaniensis</i>	Yellow Birch	S5	4 Secure
<i>Betula papyrifera</i>	Paper Birch	S5	4 Secure
<i>Corylus cornuta</i>	Beaked Hazel	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Hypericum canadense</i>	Canada St John's-wort	S5	4 Secure
<i>Hypericum perforatum</i>	Common St. John's-wort	SNA	7 Exotic
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Linnaea borealis</i>	Twinflower	S5	4 Secure
<i>Epigaea repens</i>	Trailing Arbutus	S5	4 Secure
<i>Gaultheria hispidula</i>	Creeping Snowberry	S5	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure
<i>Kalmia angustifolia</i>	Sheep Laurel	S5	4 Secure
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Quercus rubra</i>	Northern Red Oak	S5	4 Secure
<i>Lycopus americanus</i>	American Water Horehound	S5	4 Secure
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Monotropa uniflora</i>	Indian Pipe	S5	4 Secure
<i>Oxalis stricta</i>	European Wood Sorrel	S5	4 Secure
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Chimaphila umbellata</i>	Common Pipsissewa	S5	4 Secure
<i>Orthilia secunda</i>	One-sided Wintergreen	S5	4 Secure
<i>Pyrola elliptica</i>	Shinleaf	S5	4 Secure
<i>Fragaria vesca</i>	Woodland Strawberry	S4	4 Secure
<i>Fragaria virginiana</i>	Wild Strawberry	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Spiraea alba</i>	White Meadowsweet	S5	4 Secure
<i>Spiraea tomentosa</i>	Steeplebush	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure
<i>Salix spp.</i>	-	-	-
<i>Euphrasia nemorosa</i>	Common Eyebright	SNA	7 Exotic
<i>Melampyrum lineare</i>	American Cow Wheat	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Pinus strobus</i>	Eastern White Pine	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Trillium undulatum</i>	Painted Trillium	S5	4 Secure
<i>Cypripedium acaule</i>	Pink Lady's-Slipper	S5	4 Secure
<i>Oryzopsis asperifolia</i>	White-grained Mountain Rice	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	S5	4 Secure
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S5	4 Secure

Table 8: Vegetation Species Identified Along Access Trail H

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Acer spicatum</i>	Mountain Maple	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Eurybia macrophylla</i>	Large-leaved Aster	S5	4 Secure
<i>Oclemena acuminata</i>	Whorled Wood Aster	S5	4 Secure
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Senecio vulgaris</i>	Common Ragwort	SNA	7 Exotic
<i>Solidago canadensis</i>	Canada Goldenrod	S5	4 Secure
<i>Solidago flexicaulis</i>	Zigzag Goldenrod	S5	4 Secure
<i>Solidago rugosa</i>	Rough-stemmed Goldenrod	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Sonchus arvensis</i>	Field Sow Thistle	SNA	7 Exotic
<i>Symphotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Betula alleghaniensis</i>	Yellow Birch	S5	4 Secure
<i>Lobelia inflata</i>	Indian Tobacco	S5	4 Secure
<i>Cornus alternifolia</i>	Alternate-leaved Dogwood	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Cornus sericea</i>	Red Osier Dogwood	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Viburnum lantanoides</i>	Hobblebush	S5	4 Secure
<i>Viburnum nudum</i>	Northern Wild Raisin	S5	4 Secure
<i>Viburnum opulus</i>	Highbush Cranberry	S4	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure
<i>Fagus grandifolia</i>	American Beech	S4	4 Secure
<i>Prunella vulgaris</i>	Common Self-heal	S5	4 Secure
<i>Scutellaria lateriflora</i>	Mad-dog Skullcap	S5	4 Secure
<i>Fraxinus americana</i>	White Ash	S4S5	4 Secure
<i>Oxalis stricta</i>	European Wood Sorrel	S5	4 Secure
<i>Plantago major</i>	Common Plantain	SNA	7 Exotic
<i>Trientalis borealis</i>	Northern Starflower	S5	4 Secure
<i>Actaea pachypoda</i>	White Baneberry	S4	4 Secure
<i>Actaea rubra</i>	Red Baneberry	S5	4 Secure
<i>Ranunculus acris</i>	Common Buttercup	SNA	7 Exotic
<i>Ranunculus repens</i>	Creeping Buttercup	SNA	7 Exotic
<i>Agrimonia striata</i>	Woodland Agrimony	S5	4 Secure
<i>Fragaria virginiana</i>	Wild Strawberry	S5	4 Secure
<i>Malus spp.</i>	Apple spp.	-	-
<i>Potentilla norvegica</i>	Rough Cinquefoil	S5	4 Secure
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus hispidus</i>	Bristly Dewberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Mitchella repens</i>	Partridgeberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Thuja occidentalis</i>	Eastern White Cedar	S5	4 Secure

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Abies balsamea</i>	Balsam Fir	S5	4 Secure
<i>Pinus banksiana</i>	Jack Pine	S5	4 Secure
<i>Pinus strobus</i>	Eastern White Pine	S5	4 Secure
<i>Tsuga canadensis</i>	Eastern Hemlock	S5	4 Secure
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	S5	4 Secure
<i>Clintonia borealis</i>	Yellow Bluebead Lily	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Glyceria striata</i>	Fowl Manna Grass	S5	4 Secure
<i>Oryzopsis asperifolia</i>	White-grained Mountain Rice	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S5	4 Secure
<i>Gymnocarpium dryopteris</i>	Common Oak Fern	S5	4 Secure
<i>Osmunda cinnamomea</i>	Cinnamon Fern	S5	4 Secure
<i>Osmunda claytoniana</i>	Interrupted Fern	S5	4 Secure
<i>Phegopteris connectilis</i>	Northern Beech Fern	S5	4 Secure
<i>Thelypteris noveboracensis</i>	New York Fern	S5	4 Secure

Table 9: Vegetation Species Identified Along Access Trail I

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Acer pensylvanicum</i>	Striped Maple	S5	4 Secure
<i>Rhus typhina</i>	Staghorn Sumac	S5	4 Secure
<i>Aralia hispida</i>	Bristly Sarsaparilla	S5	4 Secure
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	S5	4 Secure
<i>Achillea millefolium</i>	Common Yarrow	S5	4 Secure
<i>Anaphalis margaritacea</i>	Pearly Everlasting	S5	4 Secure
<i>Conyza canadensis</i>	Canada Horseweed	S5	4 Secure
<i>Doellingeria umbellata</i>	Hairy Flat-top White Aster	S5	4 Secure
<i>Euthamia graminifolia</i>	Grass-leaved Goldenrod	S5	4 Secure
<i>Hieracium aurantiacum</i>	Orange Hawkweed	SNA	7 Exotic
<i>Hieracium pilosella</i>	Mouse-ear Hawkweed	SNA	7 Exotic
<i>Leontodon autumnalis</i>	Fall Dandelion	SNA	7 Exotic
<i>Prenanthes altissima</i>	Tall Rattlesnakeroot	S5	4 Secure
<i>Prenanthes trifoliolata</i>	Three-leaved Rattlesnakeroot	S5	4 Secure
<i>Senecio jacobaea</i>	Tansy Ragwort	SNA	7 Exotic
<i>Senecio viscosus</i>	Sticky Ragwort	SNA	7 Exotic

Scientific Name	Common Name	S Rank	Sgs Rank
<i>Senecio vulgaris</i>	Common Ragwort	SNA	7 Exotic
<i>Solidago bicolor</i>	White Goldenrod	S5	4 Secure
<i>Solidago puberula</i>	Downy Goldenrod	S5	4 Secure
<i>Sonchus arvensis</i>	Field Sow Thistle	SNA	7 Exotic
<i>Sonchus oleraceus</i>	Common Sow Thistle	SNA	7 Exotic
<i>Symphyotrichum lateriflorum</i>	Calico Aster	S5	4 Secure
<i>Tanacetum vulgare</i>	Common Tansy	SNA	7 Exotic
<i>Hypericum canadense</i>	Canada St John's-wort	S5	4 Secure
<i>Cornus canadensis</i>	Bunchberry	S5	4 Secure
<i>Diervilla lonicera</i>	Northern Bush Honeysuckle	S5	4 Secure
<i>Gaultheria procumbens</i>	Eastern Teaberry	S5	4 Secure
<i>Kalmia angustifolia</i>	Sheep Laurel	S5	4 Secure
<i>Vaccinium angustifolium</i>	Late Lowbush Blueberry	S5	4 Secure
<i>Vaccinium myrtilloides</i>	Velvet-leaved Blueberry	S5	4 Secure
<i>Trifolium arvense</i>	Rabbit's-foot Clover	SNA	7 Exotic
<i>Trifolium aureum</i>	Yellow Clover	SNA	7 Exotic
<i>Trifolium pratense</i>	Red Clover	SNA	7 Exotic
<i>Comptonia peregrina</i>	Sweet-fern	S5	4 Secure
<i>Chamerion angustifolium</i>	Fireweed	S5	4 Secure
<i>Epilobium ciliatum</i>	Northern Willowherb	S5	4 Secure
<i>Oxalis stricta</i>	European Wood Sorrel	S5	4 Secure
<i>Polygonum cilinode</i>	Fringed Black Bindweed	S5	4 Secure
<i>Rumex acetosella</i>	Sheep Sorrel	SNA	7 Exotic
<i>Rumex crispus</i>	Curled Dock	SNA	7 Exotic
<i>Agrimonia striata</i>	Woodland Agrimony	S5	4 Secure
<i>Fragaria virginiana</i>	Wild Strawberry	S5	4 Secure
<i>Potentilla norvegica</i>	Rough Cinquefoil	S5	4 Secure
<i>Potentilla simplex</i>	Old Field Cinquefoil	S5	4 Secure
<i>Rubus allegheniensis</i>	Alleghaney Blackberry	S5	4 Secure
<i>Rubus idaeus</i>	Red Raspberry	S5	4 Secure
<i>Populus grandidentata</i>	Large-toothed Aspen	S5	4 Secure
<i>Populus tremuloides</i>	Trembling Aspen	S5	4 Secure
<i>Salix spp.</i>	-	-	-
<i>Veronica officinalis</i>	Common Speedwell	S5	7 Exotic
<i>Scirpus atrocinctus</i>	Black-girdled Bulrush	S5	4 Secure
<i>Scirpus cyperinus</i>	Common Woolly Bulrush	S5	4 Secure



Scientific Name	Common Name	S Rank	Sgs Rank
<i>Sisyrinchium montanum</i>	Mountain Blue-eyed-grass	S5	4 Secure
<i>Juncus bufonius</i>	Toad Rush	S5	4 Secure
<i>Maianthemum canadense</i>	Wild Lily-of-The-Valley	S5	4 Secure
<i>Streptopus amplexifolius</i>	Clasping-leaved Twisted-stalk	S5	4 Secure
<i>Streptopus lanceolatus</i>	Rose Twisted-stalk	S5	4 Secure
<i>Dichanthelium acuminatum</i>	Woolly Panic Grass	S5	4 Secure
<i>Oryzopsis asperifolia</i>	White-grained Mountain Rice	S5	4 Secure
<i>Pteridium aquilinum</i>	Bracken Fern	S5	4 Secure
<i>Dryopteris intermedia</i>	Evergreen Wood Fern	S5	4 Secure
<i>Onoclea sensibilis</i>	Sensitive Fern	S5	4 Secure
<i>Erodium cicutarium</i>	Common Stork's-bill	SNA	7 Exotic
<i>Geranium pusillum</i>	Small-flowered Crane's-bill	-	7 Exotic

## 4.0 Summary and Conclusion

This addendum report summarizing baseline vegetation and rare plant surveys has been prepared for the proposed access trail upgrades in support of the Wocawson Energy Project.

The information provided in this document is based on the current available design/planning information and existing environment information obtained during focused field surveys conducted in August, 2018.

## 5.0 Closure

---

This report was prepared by Dillon Consulting Limited (Dillon) on behalf of the Wocawson Energy Limited Partnership, in support of the Wocawson Energy Project EIA. Dillon has used the degree of care and skill ordinarily exercised under similar circumstances at the time the work was performed by reputable members of the environmental consulting profession practicing in Canada. Dillon assumes no responsibility for conditions which were beyond its scope of work. There is no warranty expressed or implied by Dillon.

The material in the report reflects Dillon's best judgment in light of the information available to Dillon at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Yours truly,

**DILLON CONSULTING LIMITED**



**Kristin Banks, P.Eng.**

Project Manager

## **Appendix A**

### ***Additional Site Photographs***





**Photo 1:** Typical vegetation species assemblage for mixedwood dominated forest type (Trail A)



**Photo 2:** Typical vegetation species assemblage for softwood dominated forest type (Trail G)





**Photo 3:** Typical vegetation species assemblage for recent clearcut (Trail I)



**Photo 4:** Typical vegetation species assemblage for recent clearcut (Trail C)

# References

---

## Literature Cited

Dillon (Dillon Consulting Limited). 2018a. Vegetation Summary Report. Prepared for the Wocawson Project Limited Partnership by Dillon Consulting Limited, Fredericton, NB.

Dillon (Dillon Consulting Limited). 2018b. Wildlife and Wildlife Habitat Summary Report. Prepared for the Wocawson Project Limited Partnership by Dillon Consulting Limited, Fredericton, NB.