APPENDIX F
WILDLIFE SURVEYS

Natural Forces

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NATURAL FORCES DEVELOPMENTS LP

Wildlife Surveys

Westchester Wind Project - Appendix F

February 2022 – 21-1329

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1.0 Introduction

The Proponent engaged the expertise of Dillon Consulting Ltd. (Dillon) to conduct biophysical surveys for the Westchester Wind Project (Project) including identifying wildlife species that exist or that may exist throughout the Project site and throughout any other areas which may be impacted by the development. Dillon's qualified professionals have been involved in several resource development projects in Atlantic Canada and have assisted many Proponents through the provincial environmental assessment processes.

Due to the complexity of the specific assessments conducted for birds, bats, and turtles, the details those surveys is included in their respective dedicated sections. These studies are reported separately in the Valued Environmental Component Appendix Reports for Bird and Acoustic Bat Surveys and Aquatic Environment.

The majority of the proposed Project is located within an area that has been used for agriculture and forestry activities. The majority of the site is dominated by blueberry fields. Nevertheless, some areas within the proposed project footprint still extend through several less disturbed habitat types, including areas of relatively mature maple syrup operations, wetlands, and watercourses.

This appendix details the methods and results of the wildlife surveys that were conducted for the Project. As with all forms of infrastructure development, the conservation and preservation of habitat is an important consideration when siting and designing wind power projects. Field surveys were carried out to develop a baseline understanding of the wildlife and wildlife habitat that could be present within the Project development area.

1.1 Scope of Work

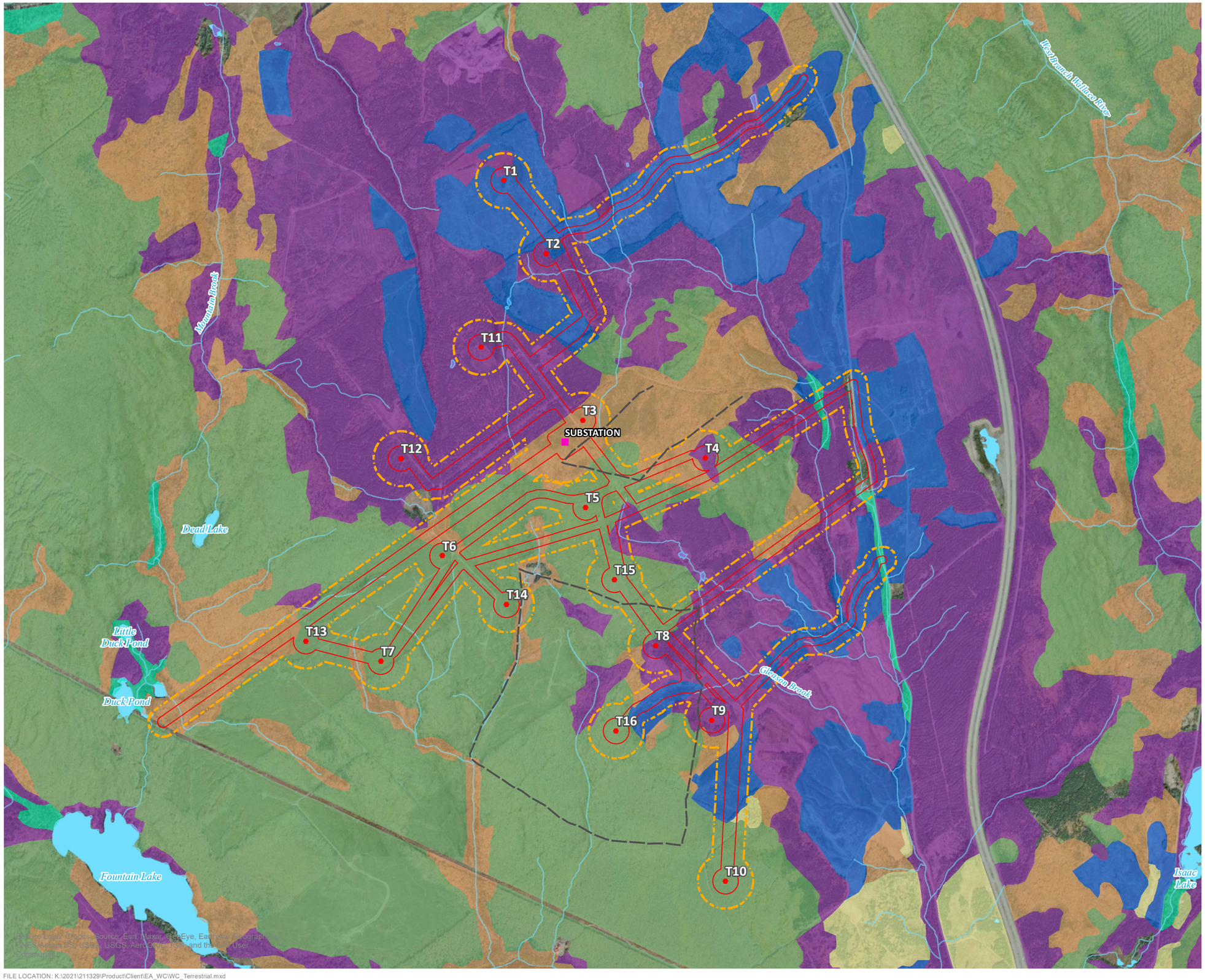
The scope of work for the wildlife and wildlife habitat surveys is based upon an understanding of the nature of the proposed project and project area, as well as the field biologists experience in assessing similar landscapes. For the purposes of this report, Wildlife and wildlife Habitat (excluding bats and birds) includes terrestrial wildlife species and their habitats that have the potential to be affected by the Project activities.

Based on the recommended protocols outlined in the "Guide to Addressing Wildlife Species and Habitat in an EA Registration Document" (NSE 2009), and feedback from the consultation process, the following scope of work was completed as part of the terrestrial wildlife and habitat surveys for the proposed project. The scope of work included:

- Background and desktop analysis;
- Targeted habitat searches of reptiles and amphibians; and

- Incidental observations of terrestrial wildlife, signs and habitat documentation during the 2021 field surveys.

For the purpose of this assessment, the spatial boundaries (i.e., the assessment area) have been identified as the Terrestrial Local Assessment Area (LAA) (i.e., a 150 m buffer surrounding the project footprint of the proposed turbine locations, substation, and a 50 m buffer surrounding connector lines, road upgrades and transmission line corridor), as shown on Figure F-1.



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WESTCHESTER WIND PROJECT

HABITATS WITHIN THE TERRESTRIAL LOCAL ASSESSMENT AREA

FIGURE F-1

- Proposed Turbine Location
- Project Development Area
- Substation
- Local Assessment Area
- Moose Survey Transect
- Watercourse
- Waterbody

Habitat (DNR Forest Inventory 2021)

- Conifer - Dominant Forest
- Mixed - Wood Forest (incuding managed sugarbush forest)
- Hardwood - Dominant Forest
- Recently Cut Area
- Blueberry Field
- Wetland

0 0.25 0.5 1 km

N W E S

SCALE 1:20,000

MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

MAP CREATED BY: MEC
MAP CHECKED BY: KB
MAP PROJECTION: NAD 1983 UTM ZONE 20N

DILLON CONSULTING

PROJECT: 21-1329
STATUS: DRAFT
DATE: 2022-02-08

FILE LOCATION: K:\2021\211329\Product\Client\EA_WC\WC_Terrestrial.mxd

2.0 Methods

2.1 Desktop Survey

Prior to completing the terrestrial field surveys, Dillon reviewed readily available information from reputable sources. The information was reviewed to evaluate the potential for moose and moose habitat within the general area of the proposed project and to assist in scoping the field program. The information was reviewed, along with information on habitats present in the general area of the proposed project to determine preliminary potential for at risk wildlife species and/or their critical habitat. Dillon completed a review of the following sources and data lists prior to completing the field surveys:

- Data from the Atlantic Canada Conservation Data Centre,
- NS DNRR forest inventory database;
- NS DNRR ownership and restricted/limited land-use database;
- NS DNRR Wet Area Mapping (WAM);
- NS Provincial Landscape Viewer; and
- Google Earth satellite imagery.

2.2 Field Surveys

Field studies of terrestrial habitats were conducted between April and October 2021, in collaboration with other targeted field surveys (i.e., avian surveys, wetlands, watercourses, baseline vegetation and rare plants). Biologists focused on the general characterization of available terrestrial habitats within the survey area, as well as the potential for sensitive species or their critical habitats occurring in the survey area. The following criteria were documented:

- Occurrence of species at risk/species of conservation concern;
- Potential habitat for species at risk/species of conservation concern; and
- Incidental observation and documentation of observed wildlife (regardless of conservation status), signs of wildlife and their habitat.

2.2.1 Pellet Group Inventory for Mainland Moose Methods

A spring Pellet Group Inventory (PGI) survey was conducted on April 28, 2021 for Eastern Mainland Moose (Alces alces Americana), with transects running through different habitat types and high-probability areas. The spring survey occurred prior to full leaf out when the ground surface was free of snow and fresh leaf litter to allow a clear, unhindered view of the forest floor during the surveys.

Prior to visiting the Study Area, environmental biologists reviewed available mapping for habitat types that support a high potential for moose, or corridors typically used by moose, to select sampling transects. Information collected during the desktop survey was used to select transect locations that a)

covered a representative portion of the Project site and b) covered a variety of habitat types with the potential to provide habitat. In particular, habitats with the following characteristics were targeted:

- mixed wood forest stands;
- coniferous forest stands fens, streams and fields;
- fens and swamps;
- streams; and,
- fields.

During the field PGI survey, any evidence of moose was documented via handheld GPS units and photos including all observances or fecal pellet groups encountered along pre-determined straight line transects. Each transect will be walked using a compass and recorded using a handheld GPS unit. Only those pellet groups detected atop of the last major leaf fall (i.e. fall 2020) and within 1 m of the transect-line were used in calculations regarding potential number of moose or deer in the area.
Evidence included (but was not limited to) incidental sightings, tracks, antler sheds, rubbings, scat (pellets), and / or evidence of browsing and trails. Transect 1 was 1825 m long, and Transect 2 was 4725 m long. In addition to conducting formal moose surveys, the Study Area was continuously surveyed for incidentals during the other field reconnaissance programs in 2021.

PGI surveys were performed by experienced wildlife biologist and field technologists skilled at identifying mainland moose signs (including pellets). During these surveys, Dillon also record evidence of other wildlife species possibly occurring within the Study Area, including but not limited to; dens, tracks, other scat, browse marks, and even direct visual observation, as well as habitat types along the transects, were also noted to confirm the results of the desktop analysis and to be included in the terrestrial habitat survey as part of the Project EA.

3.0 Results

During the 2021 field surveys, observations of seven (7) mammal species, three (3) amphibian species and one (1) terrestrial reptile species were identified within the assessment area by Dillon.

The mammal species observed or detected include:

- American Beaver (Castor canadensis);
- American Black Bear (Ursus americanus);
- Eastern Coyote (Canis latrans);
- Red Fox (Vulpes vulpes);
- Snowshoe Hare (Lepus americanus)
- Northern Raccoon (Procyon lotor); and,
- White-tailed Deer (Odocoileus virginianus).

Reptiles and amphibian species observed, or detected, include:

- Wood Frog (Lithobates sylvaticus);
- Green Frog (Lithobates clamitans);
- Pickerel Frog (Lithobates palustris); and,
- Common Garter Snake (Thamnophis sirtalis).

A summary of incidental wildlife observations during the 2021 field surveys and assessments is presented in Table F-1. A list of recorded observations of wildlife species from the 2021 surveys (excluding bats, birds and turtles) is presented in Table F-2 and includes their ACCDC S-ranks. The wildlife species observed have secure populations within Nova Scotia according to the ACCDC (2021). During the 2021 terrestrial field surveys, Dillon biologists recorded incidental observations or detections of wildlife during the course of other survey efforts and when possible, photographs were taken (see the photo plate included in this appendix for representative photos). Such detections are rarely direct observations or vocalizations, but rather proxy evidence that is left behind and remains identifiable to species for some time after the animal has moved on. This includes more readily detectable indicators such as animal tracks in snow/mud or animal scat, but also less obvious indicators such as browse marks, dens and/or burrow structures.

Table F-1: Wildlife and Incidental Surveys

Date (2021)	Primary Survey Type	Incidental Wildlife Observations
May 14	Bird	Red Fox direct observation
May 14	Bird	White-tailed Deer fresh tracks
May 21	Bird	White-tailed Deer fresh tracks
May 26	Bird	Snowshoe Hare direct observation
June 7	Plant	White-tailed Deer fresh tracks
June 7	Plant	Eastern Coyote fresh scat
June 7	Plant	American Beaver dam
June 28	Bird	White-tailed Deer direct observation – doe with fawn
June 28	Bird	White-tailed Deer direct observation
June 28	Bird	White-tailed Deer fresh tracks
June 28	Bird	White-tailed Deer fresh tracks
June 28	Bird	White-tailed Deer fresh tracks
June 28	Bird	Common Garter Snake direct observation
June 28	Bird	White-tailed Deer direct observation
June 28	Bird	White-tailed Deer direct observation – doe with fawn
July 15	Wetland	American Black Bear direct observation
July 15	Wetland	Wood Frog direct observation
July 19	Plant	American Black Bear fresh scat
July 19	Plant	Wood Frog direct observation
July 19	Plant	Wood Frog direct observation
July 19	Plant	American Black Bear skull and other bones
Aug. 25	Wetland	White-tailed Deer direct observation
Aug. 25	Wetland	Eastern Coyote fresh scat
Aug. 25	Wetland	Green Frog direct observation
Aug. 25	Wetland	White-tailed Deer fresh tracks with young
Aug. 25	Wetland	Eastern Coyote direct observation
Aug, 30	Bird	White-tailed Deer direct observation – doe with 2 fawns
Sept. 7	Bird	American Black Bear fresh scat

Date (2021)	Primary Survey Type	Incidental Wildlife Observations
Sept. 7	Bird	Green Frog direct observation
Sept. 7	Bird	Eastern Coyote fresh scat
Sept. 15	Bird	White-tailed Deer fresh tracks
Sept. 27	Bird	White-tailed Deer direct observation – doe with 2 fawns
Sept. 27	Bird	Eastern Coyote fresh scat
Sept. 27	Bird	Eastern Coyote fresh scat
Sept. 27	Bird	American Black Bear fresh scat
Sept. 27	Bird	American Black Bear fresh tracks
Sept. 27	Bird	Young American Black Bear fresh tracks
Sept. 27	Bird	White-tailed Deer fresh tracks
Oct. 5	Wetland	Young White-tailed Deer fresh tracks
Oct. 5	Wetland	Eastern Coyote fresh scat
Oct. 5	Wetland	Northern Raccoon fresh tracks
Oct. 5	Wetland	Pickerel Frog direct observation
Oct. 5	Wetland	Old, small American Beaver dam
Oct. 8	Watercourse	White-tailed Deer fresh tracks
Oct. 8	Watercourse	Eastern Coyote fresh scat

Table F-2: Wildlife Observations from 2021 Field Surveys (Excluding Bats, Birds and Turtles)

Species	S-Rank	Date	Observations
White-tailed Deer (Odocoileus virginianus)	S5	May 14	Fresh tracks
		May 21	Fresh tracks
		June 7	Fresh tracks
		June 28	Doe w/ fawn
		June 28	Direct observation
		June 28	Fresh tracks
		June 28	Fresh tracks
		June 28	Fresh tracks
		June 28	Direct observation
		June 28	Doe w/ fawn
		August 25	Direct observation
		August 25	French tracks w/ young
		August 30	Doe w/ two fawns
		September 15	Fresh tracks
		September 27	Doe w/ 2 fawns
		September 27	Fresh tracks
		October 5	Fresh tracks, young
		October 8	Fresh tracks
American Beaver (Castor canadensis)	S5	June 7	Beaver dam
		October 5	Old dam, small
Eastern Coyote (Canis latrans)	S5	June 7	Fresh scat
		August 25	Fresh scat
		August 25	Direct observation
		September 7	Fresh scat
		September 27	Fresh scat
		September 27	Fresh scat
		October 5	Fresh scat
		October 8	Fresh scat
American Black Bear (Ursus americanus)	S5	July 15	Direct observation
		July 19	Scat
		July 19	Skull and other bones
		September 7	Fresh scat
		September 27	Fresh scat
		September 27	Fresh tracks
		September 27	Young bear tracks
Snowshoe Hare (Lepus americanus)	S5	May 26	Direct observation

Species	S-Rank	Date	Observations
Red Fox ((Vulpes vulpes)	S5	May 14	Direct observation
Green Frog (Lithobates clamitans)	S5	August 25	Direct Observation
		September 7	Direct Observation
Pickerel Frog (Lithobates palustris)	S5	October 5	Direct Observation
Wood Frog (Lithobates sylvaticus)	S5	July 15	Direct Observation
		July 19	Direct Observation
		July 19	Direct Observation
Common Garter Snake (*Thamnophis sirtalis*)	S5	June 28	Direct Observation

3.1 Mainland Moose

Although not encountered, mainland moose were reported by the ACCDC as being observed within 10 km of the site and potential habitat is available at the site. Dillon biologists were aware of the potential for moose to be present in the LAA and to record signs of moose if encountered. Such signs include scat, tracks, high browse and shed antlers; however, there were no observations or signs of moose reported during the 2021 field surveys. In addition, targeted moose surveys were conducted in April, 2021.

No signs of moose (i.e., antler sheds, rubbings, tracks, browse, sightings and / or pellets) were identified during the moose survey. Light browse, shed antler and deer pellets were observed in each transect; however, it was deemed associated with White-tailed Deer (Odocoileus virginianus) based on additional evidence such as tracks and trails.

Photo Plate

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American Black Bear	Eastern Coyote	White-tailed Deer
		
Scat July 19, 2021	Scat Sept 29, 2021	Tracks May 14, 2021
Red Fox	**American Beaver**	**Common Garter Snake**
		
Scat May 14, 2021	Small old dam October 5, 2021	Observation June 28, 2021

References

Nova Scotia Environment [NSE]. (2009). Guide to Addressing Wildlife Species and Habitat in an EA Registration Document. November 2005, Revised September 2009. Available at: https://novascotia.ca/nse/ea/docs/EA.Guide-AddressingWildSpecies.pdf

Nova Scotia Department of Natural Resources and Renewables. 2021. Recovery Plan for the Moose (Alces alces Americana) in Mainland Nova Scotia. Nova Scotia Endangered Species Act Recovery Plan Series. 96pp.