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NATURAL FORCES DEVELOPMENTS LP

Turtle Appendix 2021-2022

Westchester Wind Project





December 13, 2022

Natural Forces Developments LP
Westchester Wind Project
1801 Hollis Street, Suite 1205
Halifax, NS
B3J 3N4

Attention: Megan MacIsaac

Turtle Appendix: 2021 -2022 Turtle and Turtle Habitat Assessment for the Westchester Wind Project

Dillon Consulting Limited (Dillon) is pleased to provide you with the final report for the turtle and turtle habitat assessment for the studies conducted as part of the environmental assessment for the Westchester Wind Project.

We trust the following meets your present needs. If you have any questions or comments, please contact the undersigned at (902) 450-4000 ext. 5052 at your convenience.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in black ink, appearing to read "Kelly Regan".

Kelly Regan, M.Sc.
Project Manager, Associate

BJG:jb

Enclosure

Our file: 22-4065

137 Chain Lake Drive
Suite 100
Halifax, Nova Scotia
Canada
B3S 1B3
Telephone
902.450.4000
Fax
902.450.2008

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Introduction

Dillon Consulting (Dillon) was retained by Natural Forces Developments Limited Partnership (the Proponent) on behalf of the Westchester Wind Limited Partnership to complete natural environment surveys in support of the development of a Nova Scotia Environmental Assessment Registration Document (EARD) and associated Addendum for the Westchester Wind Project (the Project). The Project is being developed and will be owned and operated by the Westchester Wind Limited Partnership, a partnership between Natural Forces Developments Limited Partnership (referred to herein as the Proponent or Natural Forces) and Wskijnu'k Mtmo'taqtuow Agency Limited (the Agency), a corporate body wholly owned by the 13 Mi'kmaw bands in Nova Scotia. Natural Forces acts on behalf of the Westchester Wind Limited Partnership for many aspects of Project development.












The Project consists of up to 12 wind turbine generators (WTGs) capable of producing up to 50 MW of renewable energy that will be connected to the existing Nova Scotia Power transmission grid via an overhead transmission line, as well as a substation (Figure 1). The Project is located on a mixture of privately-owned blueberry fields, previously forested land and undeveloped forested land in Cumberland County near the communities of Westchester Station, Rose, and Londonderry.

The proposed project is located in an area where turtles and turtle habitat are present. Turtles and turtle habitat are considered important features and valued environmental components (VECs) because they are valued in their relationship with other wildlife and wildlife habitat, including other biological and physical components addressed as VECs in this environmental assessment (EA). Natural environment surveys for the Project were conducted for VECs that were identified based on an understanding of the environmental features of the proposed project area, the nature of the Project, and the potential interactions that may occur between the proposed project and the environment/VECs.

Taking into consideration the objectives of the EARD, this report provides an effects assessment on turtles and turtle habitat, and includes: a brief overview of the proposed Project; a description of the scope and methodology used for the turtle assessment; a summary of the survey results; and, an assessment of residual effects (including potential interactions and mitigation) of the proposed Project on turtles and turtle habitat.

PROJECT LOCATION AND SITE LAYOUT

FIGURE 1

-  Proposed Turbine Location
-  Proposed Substation Location
-  Property Lines
-  Roads to be Upgraded
-  Proposed Access Roads
-  Proposed Collector Network
-  Proposed Interconnection Line
-  Transmission Line
-  Highway
-  Watercourse
-  Waterbody

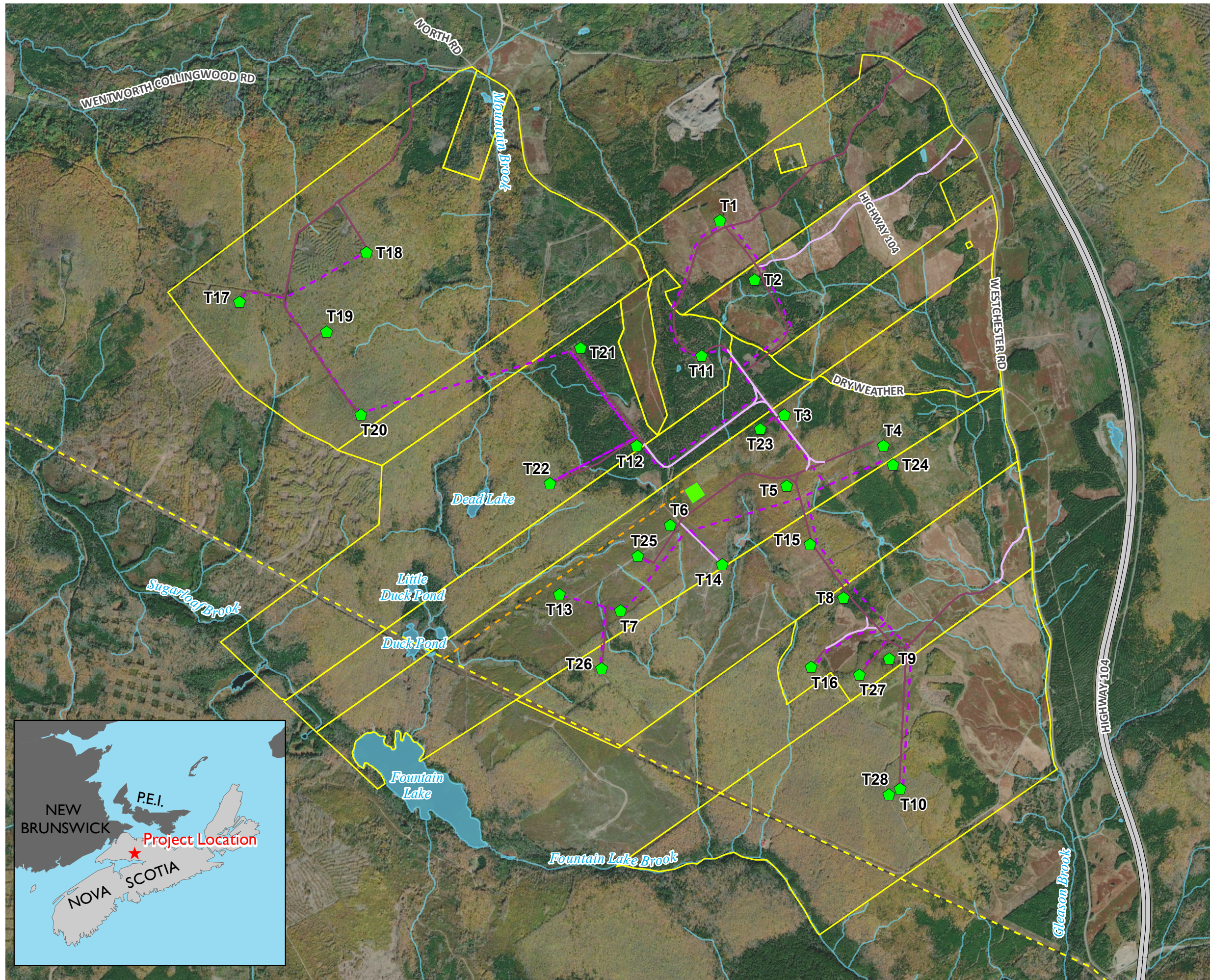


MAP DRAWING INFORMATION:
DATA PROVIDED BY DILLON CONSULTING, GEONB, NATURAL FORCES

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



PROJECT: 21-1329
STATUS: DRAFT
DATE: 2022-12-09



1.1 Background

The Project is located in an area that are highly fragmented habitat consisting of active and historical forestry activities, privately owned blueberry fields and undeveloped forested land. The Project site was selected due to the existing mixed anthropogenic land uses and impacts over these areas, in order to minimize impacts to undeveloped lands as much as feasible. The region where the Project site is located within is generally characterized by late successional Acadian shade tolerant hardwood forests (Neily et al. 2017). At higher elevations within this ecodistrict, such as those within the proposed Potential Development Area (PDA), softwood stands occur on moist, level terrain, with shade tolerant mixed-wood forests found along steep-sided ravines (Neily et al. 2017).

Critical Habitat for snapping turtles and Eastern painted turtles has not been defined. For the wood turtle, ECCC (2020a) has partially defined their Critical Habitat based on habitat occupancy and habitat suitability; noting that further studies are underway to identify Critical Habitat for this species (ECCC 2020a). The locations of wood turtles and their habitats are not publicly available; therefore 1:250 000 scale mapping was reviewed to identify the potential for the Project to intersect with wood turtles and their Critical Habitats. Wood turtles display considerable variation in terrestrial habitat use across their range (COSEWIC 2007); however, some habitat types that are essential during specific phases of its life cycle (i.e., nesting and overwintering) are becoming rare (ECCC 2020a). Critical Habitat for the wood turtle has been identified in one of the watersheds that intersects the PDA (i.e., within the Wallace River secondary watershed in the West Branch of the Wallace River, beginning approximately 2 km from the PDA.

There is potential for interactions between turtles and turtle habitat, and the proposed Project activities. Particular focus is placed on species at risk (SAR) and species of conservation concern (SOCC) as identified by provincial and federal regulatory agencies. SAR/SOCC are often susceptible to changes in the environment and, therefore, are useful indicators of ecosystem health and regional biodiversity. Both provincial and federal legislation provides protections to designated fauna SAR. SAR are protected under the federal *Species at Risk Act* (SARA) and the Nova Scotia *Endangered Species Act* (ESA).

Although the Project layout was designed to minimize the disturbance of naturalized areas as well as prioritizing development in areas with existing anthropogenic disturbance, some areas within the proposed footprint for the Project will extend through less disturbed habitat types, including areas with mature trees, wetlands, and watercourses.

Purpose and Objectives of the Report

This report provides a summary of the turtle and turtle habitat assessments that were conducted as part of the biophysical surveys undertaken in support of the Project's Environmental Assessment (EA) registration. This report includes:

- A brief description of the Project;
- A description of the scope and methods used for the surveys;
- The results of the desktop and field assessment; and,
- An assessment of residual effects (including potential interactions and mitigation) of the proposed Project on turtle and turtle habitat.

Project Description

The following is a high-level summary of the Project. Please refer to the Westchester Wind Project Environmental Registration Document Addendum (the Addendum) dated December 2022 for further information.

The Project is located on Westchester Mountain in Cumberland County, Nova Scotia. The Project is proposed to have an installed capacity of up to 50 MW, amounting to up to 12 wind turbine generators and associated infrastructure, including an electrical substation, collector lines, and overhead transmission line (Figure 1).

The Project will be located predominantly on privately-owned lands used for blueberry farming, forestry, maple groves, and recreation (i.e., snowmobile trails). An easement will be required over a 300 m stretch of Crown land along an existing access road. The forestry activities include previously forested land at varying stages of regeneration, as well as undeveloped forested lands owned by forestry companies. In addition, the Project site met crucial factors that determined suitability, which included features such as the strength and consistency of the wind resources and its proximity to existing electrical and civil infrastructure. The Project site was selected due to the existing mixed anthropogenic land uses and historical anthropogenic impacts in these areas, in order to minimize impacts to undeveloped lands to the extent feasible.

The purpose of the Project is to contribute to Nova Scotia achieving their renewable electricity targets through the generation of clean and renewable energy. Not only will this have environmental benefits, but will also reduce Nova Scotia's reliance on imported energy sources through the development of a localized renewable energy generation (*Renewable Electricity Regulations* 2021).

3.0 Scope of Work

The scope of work for the turtle and turtle habitat assessments is based on the recommended approach outlined in the Guide to Preparing an EA Registration Document for Wind Power Projects in Nova Scotia (NSECC 2021), as well as in the Guide to Addressing Wildlife Species and Habitat in an EA Registration Document (NSECC 2009).

The scope of work for the turtle and turtle habitat assessments included the following:

- An initial desktop assessment of habitats within the Local Assessment Area (LAA);
- A desktop assessment of wildlife species and risk (SAR) and species of conservation concern (SoCC) with the potential to occur within the Potential Development Area (PDA);
- Targeted habitat searches of reptiles and amphibians within the LAA; and,
- Incidental observations of terrestrial wildlife, signs and habitat documentation during the 2021 and 2022 field surveys.

The scope of work for the turtle surveys included targeted habitat searches of reptiles and amphibians within the LAA, as well as incidental observations of turtles throughout the 2021 and 2022 field seasons.









3.1 Spatial Boundaries

For the purpose of the turtle and turtle habitat assessment conducted as part of the biophysical baseline assessment for the Project, the spatial boundaries include the Potential Development Area (PDA) and the Local Assessment Area (LAA). For this VEC, the LAA was selected to identify habitats with the potential to support turtles (e.g., watercourses, waterbodies and riparian habitat) that has the potential to be impacted by the Project. The extent of each spatial boundary and purpose for the assessment of fish and fish habitat is summarized in Table 1 and shown on Figure 2.

Table 1: Spatial Boundaries for the Assessment of Turtle and Turtle Habitat

Assessment Area	Definition	Purpose of Boundary
Potential Development Area	Area encompasses the Project footprint and a buffer of 15 m on either side of shoulders of the roadways (either existing or new) and collector lines and transmission line, a 75 m buffer around the base of each turbine location, and a 25 m buffer around the substation.	Represents the extent of all anticipated areas that could undergo physical disturbance associated with the Project. This area encompasses all of the proposed 28 turbines locations and their associated infrastructure. The Project would consist of up to 12 of those locations and their associated infrastructure.
Study Area	<ul style="list-style-type: none"> Watercourse crossings within 30 m of the PDA were assessed in the field from 50 m upstream to 100 m downstream from the PDA; and Transect-based survey areas within the LAA targeting representative habitats. 	The area covered on foot during surveys. Observations in the study area are applied to understand potential effects of the Project on the LAA.
Local Assessment Area	Waterbodies and watercourses within a buffer of 30 m of the PDA.	The maximum area where Project-specific environmental interactions can be predicted and measured with a reasonable degree of accuracy and confidence (i.e. the zone of influence of the Project phases on each VEC).

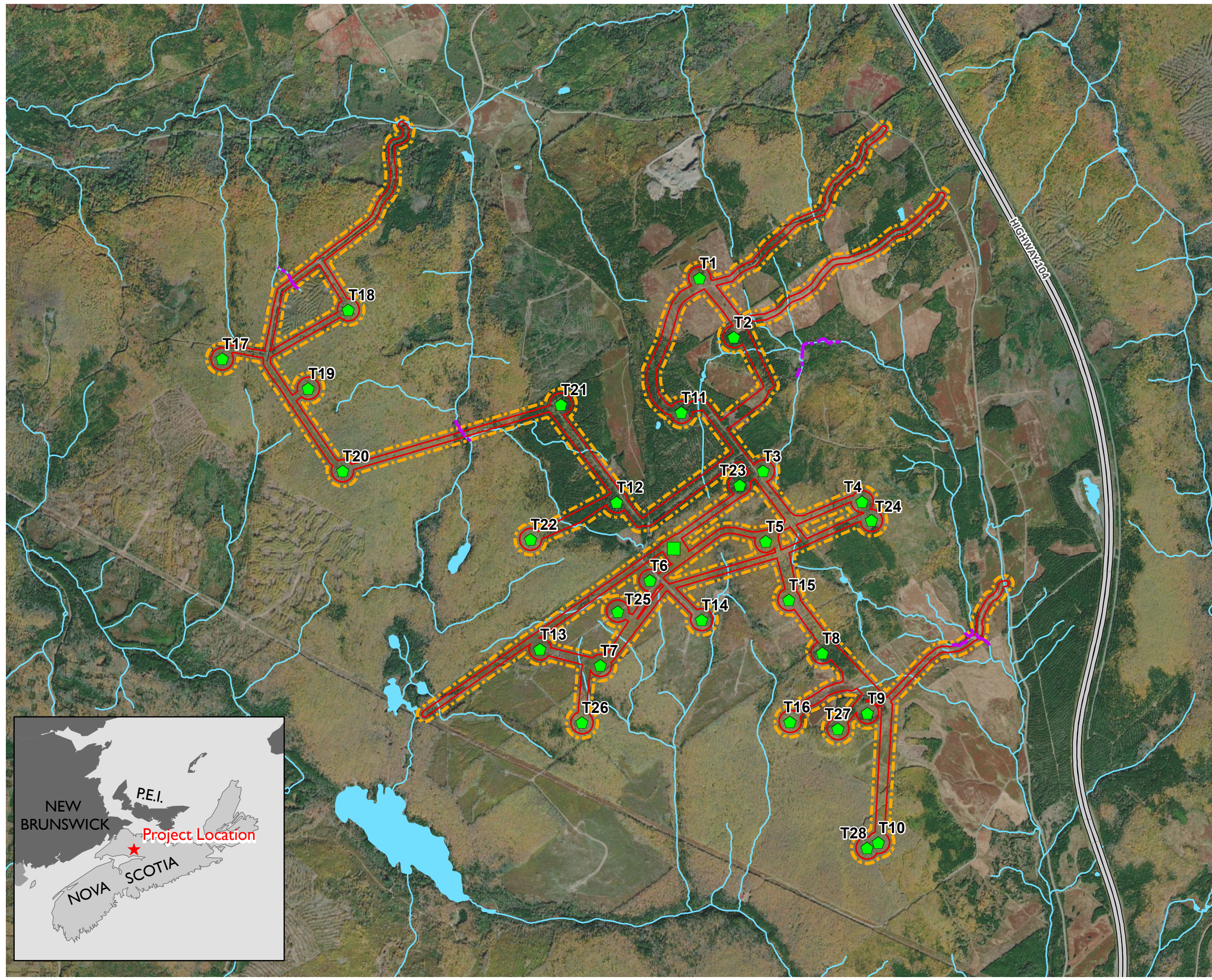
LOCAL ASSESSMENT AREA FOR TURTLES AND TURTLE HABITAT
FIGURE 2

-  Proposed Turbine Location
-  Proposed Substation Location
-  Turtle Transect
-  Potential Development Area (PDA)
-  Local Assessment Area (LAA)
-  Highway
-  Watercourse
-  Waterbody



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4.0 Methods

4.1 Desktop Assessment and Turtle SAR and SoCC Screening

Prior to completing the field assessments, Dillon reviewed readily-available information from reputable sources. The information was reviewed to evaluate the potential for turtles and turtle habitat to be found within the LAA for the Project and to assist in scoping the field program. The information was reviewed, along with information on habitats present in the LAA to determine preliminary potential for at-risk turtle species and/or their critical habitat. Dillon completed a review of the following sources and data lists prior to completing field surveys:

- *Guide to Addressing Wildlife Species and Habitat in an EA Registration Document* (NSE 2009);
- *Fauna Desktop Study* by Strum Environmental (Strum 2013);
- Available mapping to develop a list of potential terrestrial habitat types from:
 - Nova Scotia Department of Natural Resources and Renewables (NS DNRR) forest inventory database;
 - NS DNRR ownership and restricted/limited land-use database;
 - NS DNRR wet areas mapping (WAM);
 - Publicly available GIS map layers (e.g., ecological land classification, forest and non-forest inventory, wetland inventory, Protected Natural Areas, Wildlife Management Zones);
 - NS Provincial Landscape Viewer; and
 - Google Earth® satellite imagery.

The proposed PDA will span several landscapes and include areas that have the potential to provide habitat for SAR and SoCC populations, including turtles. Natural Forces is committed to protecting SAR, SoCC, and their habitat as important features.

For this EA, the following definitions of SAR and SoCC apply:

- **Species at Risk (SAR):** A species that is determined to be *Endangered*, *Threatened*, or *Vulnerable/Special Concern* by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), *Nova Scotia Endangered Species Act* (NSESAs), or the federal *Species at Risk Act* (SARA); and
- **Species of Conservation Concern (SoCC):** Those species that are not SAR but are identified as regionally vulnerable or imperilled by the Atlantic Canada Conservation Data Centre (ACCDC) (i.e., those species with ACCDC S-ranks of S1: Critically imperilled in province; S2: Imperilled in province; and S3: Vulnerable in province of Nova Scotia).

4.2 Field Assessments

4.2.1 Incidental Reporting

Field studies of terrestrial habitats were conducted between April and October 2021 and 2022, in collaboration with other targeted field surveys (i.e., bird surveys, wetlands, watercourses, baseline vegetation and rare plants). Biologists focused on the general characterization of available turtle habitats within the survey areas, as well as the potential for sensitive species or their critical habitats occurring in the survey area. The following criteria were documented:

- Occurrence of SAR/SoCC;
- Potential habitat for SAR/SoCC; and
- Incidental observation and documentation of observed turtles (regardless of conservation status), signs of turtles or their habitat.

4.2.2 Turtle Habitat Survey

Surveys for turtles and their habitat were included in the aquatic habitat assessments at request of NSDNRR due to the proximity of the Project to Critical Habitat for the wood turtle (*Glyptemys insculpta*). The West Branch of the Wallace River, beginning approximately 2 km from the PDA is considered Critical Habitat for wood turtle.

Informed by the results of the desktop assessment, two watercourses that intersect the PDA were identified as having the potential to support wood turtles (i.e., Gleason Brook and Mountain Brook). A habitat suitability assessment survey was conducted along sections of Gleason Brook and Mountain Brook that intersect the PDA (Figure 2). The purpose of a habitat suitability assessment is to identify potential conditions in which turtle species can carry out any of the components of their life cycle. For wood turtles this includes activities such as overwintering, mating, thermoregulation, nesting, and foraging, as well as their movements between aquatic and terrestrial habitats. For the purpose of this assessment, watercourse attributes primarily associated with overwintering, thermoregulation and nesting within a 25 m buffer of the watercourses' banks were documented using a hand-held GPS unit with photographs.

The surveys for Gleason Brook were conducted during the month of June (i.e., June 7, 2021), when air temperatures can be anticipated to be warmer than that of the assessed watercourses (Brown, Cochrane, & Moen, 2017). This survey timing increases the likelihood of turtle detection, as most turtle species tend to utilize terrestrial habitat more often, such as basking areas to regulate their body temperatures during this time. In contrast, when air temperatures are colder than that of the water, turtles tend to stay submerged or on the surface of aquatic features such as watercourses or ponds (Brown, Cochrane, & Moen, 2017). Surveys to identify potential habitat within Mountain Brook were conducted in July (July 13 and 26-27, 2022) when water levels were at relatively low stage.

Any direct turtle observations were to be recorded including the species (if discernible), canopy coverage (%), and GPS (UTM NAD 83) location. Where turtles are protected species, if observed, no effort to capture, measure or disturb individuals was to be made. All potential habitat features within 25 m of assessed watercourses were to be identified for the purpose of mapping potential habitat for wood turtles. Observations of suitable habitat features, if present, were documented with a GPS location (UTM NAD83), as well as an approximate size of the feature (m²), slope (degrees), and aspect.

Incidental searches for turtles were carried out in concert with the wetland field surveys, as well as during other surveys when suitable aquatic habitat was encountered. During the wetland surveys, encountered watercourses and waterbodies were assessed visually for signs of turtles (i.e., direct observations or evidence of nesting). The incidental searches for turtles occurred between June 1 and September 30, 2021, and between April and October 2022.

5.0 Results

The results of both the desktop and field assessments for turtles and turtle habitat are presented below.

5.1 Desktop Assessment and Turtle SAR and SoCC Screening

Although the Project layout was designed to minimize the disturbance of naturalized areas by prioritizing development in areas with existing anthropogenic disturbance, some areas within the proposed footprint for the Project will extend through less disturbed habitat types, including areas with mature trees, wetlands, and watercourses. Available mapping was reviewed to select watercourses for field assessments of turtle habitat. Two watercourses, Gleason Brook and Mountain Brook, were selected as having the potential to support turtles based on their permanency and connection to larger river systems that may provide habitat for important life stages for turtles.

Site-specific AC CDC reports were generated on May 7, 2021 and September 20, 2022, and included historical observations of SAR and SoCC reported within 5 km of the PDA. Due to the size of the PDA, a search of the AC CDC database was requested to include results from a radius of 10 km from the PDA Centre in 2022. For information purposes, the AC CDC report included SAR and SoCC observations from 100 km from the PDA centre, therefore it is important to note that some of turtle species observed further from the PDA may not have suitable habitat present within the LAA.

Wood turtles, Eastern painted turtles, and snapping turtles (*Chelydra serpentina*) have been historically identified within 15 km of the PDA based on the 2021 and 2022 ACCDC reports. Within 100 km of the PDA, Table 2 below summarizes the historical observations of turtle SAR and SoCC within 100 km of the PDA, as reported by the ACCDC (2022b). The three-turtle species are all considered to be SAR based on their conservation status and the definition of SAR for the purposes of this EA. A document review for turtle management plans was conducted for turtles with the potential to occur in the vicinity of the proposed Project to identify potential Critical Habitat or other designated areas with significant turtle habitat. Critical Habitat is defined under Section 2 of SARA as: "the habitat that is necessary for the survival or recovery of a listed wildlife species and that is identified as the species' Critical Habitat in the recovery strategy or in an action plan for the species." The following federal and/or provincial recovery strategies/plans and managements plans for the three turtles have been published to date:

- Environment and Climate Change Canada. 2020. Recovery Strategy for the Wood Turtle (*Glyptemys insculpta*) in Canada. Species at Risk Act Recovery Strategy Series. Environment and Climate Change Canada, Ottawa. vi + 52 pp.
- Nova Scotia Department of Lands and Forestry. 2020. Recovery Plan for the Wood turtle (*Glyptemys insculpta*) in Nova Scotia [Final]. Nova Scotia Endangered Species Act Recovery Plan Series.

- Environment and Climate Change Canada. 2020. Management Plan for the Snapping Turtle (*Chelydra serpentina*) in Canada. Species at Risk Act Management Plan Series. Environment and Climate Change Canada, Ottawa, iv + 40 p.

Critical Habitat for the wood turtle has been identified in one of the watersheds that intersects the PDA (i.e., within the Wallace River secondary watershed in the West Branch of the Wallace River, beginning approximately 3 km from the nearest proposed WTG location). Though a part of the PDA (an existing road) crosses through the Wallace River secondary watershed, the watercourses within the watershed are not anticipated to be affected given that they do not intersect the existing road.

Table 2: Historical Observations of SAR and SOCC within 100 km of the PDA Centre (ACCDC 2022b)

Species	Ranking	Number of Observation	Distance from PDA Centre
Wood turtle <i>Glyptemys insculpta</i>	COSEWIC: Threatened SARA: Threatened NS ESA: Threatened ACCDC: S2	956	9.3 ± 0 km
Snapping turtle <i>Chelydra serpentina</i>	COSEWIC: Special Concern SARA: Special Concern NS ESA: Vulnerable ACCDC: S3	125	14.8 ± 0 km
Eastern painted turtle <i>Chrysemys picta picta</i>	SARA: Special Concern COSEWIC: Special Concern ACCDC: S4S5	200	7.2 ± 10 km

Notes:

Sub-national (provincial) ranks (S-ranks) retrieved from the Atlantic Canada Conservation Data Centre (ACCDC) and are up to date as of September 2022 for the province of Nova Scotia.

S1 Critically Imperiled; S2 Imperiled; S3 Vulnerable; S4 Apparently Secure; S5 Secure.

5.2 Field Assessments

During the 2021 and 2022 biophysical surveys for the EA of the Project, Dillon biologists recorded incidental observations or detections of wildlife, including turtles during the course of other targeted survey efforts, and when possible, photographs were taken. Such detections are rarely direct observations, but rather proxy evidence that is left behind and remains identifiable 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.

During the 2021 and 2022 field surveys, there were no incidental observations of turtles within the LAA by Dillon biologists.

5.2.1

Wood Turtle Habitat Surveys

Targeted surveys for turtle habitat were undertaken within sections of Gleason Brook and Mountain Brook that intersect with the PDA. No turtles were identified during the 2021 or 2022 field surveys during targeted watercourse surveys or incidentally through other biophysical assessments. Furthermore, no locations of suitable wood turtle habitat were identified in the assessed section of Gleason Brook or Mountain Brook as the watercourse do not contain the necessary characteristics to support turtle habitat (i.e., slow moving, relatively deep water, and/or sand banks/bars). As identified through the desktop assessment, Gleason Brook and Mountain Brook are connected to larger river systems that have could potentially support turtles.

6.0

Effects Assessment and Mitigation Recommendations

The following discussion includes the potential impacts of the Project to turtles and turtle habitat, proposed mitigation measures, as well as potential residual and cumulative impacts of the Project to turtles and turtle habitat.

6.1

Identification of Potential Environmental Effects

Turtles and turtle habitat were assessed over two years, as discussed above in Sections 4 and 5. The identification of anticipated potential interactions between the Project and turtles and turtle habitat is presented below.

6.1.1

Approach to Project Components

The Project has three main phases, during each of which the potential interactions with the surrounding environment are considered distinct. Unplanned events are considered separately from the phases.

The phases of the Project include:

1. *Planning, Site Preparation and Construction Phase;*
2. *Operation Phase; and*
3. *Decommissioning Phase.*

The Project interaction matrix in Table 3 is used as an initial screening to assist in determining if an interaction is possible between the activities of each phase of the Project and turtle and turtle habitat.

Table 3: Project Interactions with Environmental Components

Valued Environmental Component	Project Phases			
	Planning, Site Preparation and Construction Phase	Operation Phase	Decommissioning Phase	Unplanned Events
Turtle and Turtle Habitat	✓	✓	✓	✓

Legend: ✓ = Potential interaction identified

Those Project phases for which a checkmark is provided indicates that the Project may interact with turtles and turtle habitat, and thus an environmental effects assessment is warranted. In this case, it is possible that interactions could occur during each phase of the Project as discussed below. Mitigation measures for unplanned events (including but not limited to potential accidents, malfunctions or severe weather events) are also included in Table 4, below.

6.1.2 Identification of Potential Environmental Effects

Without mitigation, the Project has the potential to cause a minor reduction of some turtle habitat due to the installation of linear infrastructure and turbine foundations. While the construction and decommissioning phases present potential for negative impact, impacts are reversible once the decommissioning phase has started and land reclamation activities restore the Project site to its previous state. Without mitigation, the Project is anticipated to interact with turtles and their habitats and cause environmental effects in the following ways:

- Temporary disturbance, or displacement from surrounding habitat, during Project construction and decommissioning activities due to increased human presence, noise and anthropogenic footprint;
- Loss of habitat due to project infrastructure and crane pads during construction, operation, and decommissioning; and
- Temporary disturbance of potential foraging and basking turtles due to increased human presence and noise within the Project footprint.

6.1.3 Standard Mitigation of Potential Environmental Effects

Standard mitigation has been identified for the anticipated interaction and/or effect in relation to wildlife and wildlife habitat, including turtles, in an attempt to prevent the interaction from occurring if possible, or to reduce the magnitude, geographic extent, frequency, duration, reversibility, or ecological/socioeconomic context of the interaction. Best management practices (based on industry guidelines and regulatory guidance documents) have been proposed as mitigation measures. In addition, several acts, codes, regulations and guidelines may require appropriate actions be conducted as mitigation measures prior to or during the interaction.

The federal and provincial legislation and codes that could apply to the Project include (but may not be limited to):

- *Canadian Environmental Protection Act* and regulations (ECCC 1999);
- *Species at Risk Act* (ECCC 2002);
- *Transportation of Dangerous Goods Act*, and regulations (TC 1992);
- Nova Scotia Environment Act and regulations (NSG 1994-95);
- Nova Scotia Water Resources Protection Act, and regulations (NSG 2000);
- Nova Scotia Endangered Species Act, and regulations (NSG 1998a);
- Nova Scotia Wilderness Areas Protection Act (NSG 1998b), and regulations; and
- Contingency Planning Guidelines (NSECC 2021).

To further reduce the likelihood of interactions between any phase of the Project and wildlife, the mitigation measures, summarized below in Table 4 will be followed.

Table 4: Potential Interactions and Proposed Mitigation for Wildlife

Potential Interactions with Wildlife	Proposed Mitigation Measures
<p>Short-term, reversible disturbance of foraging or basking habitat during Project activities due to increased human presence, noise and Project footprint.</p>	<ol style="list-style-type: none"> 1. Vegetation will be retained where possible to maintain turtle habitat; 2. The Project footprint will be limited to that which is necessary to enable the Project to be carried out; 3. Existing roads and trails will be utilized to limit disturbance outside the Project footprint and minimize the interactions with turtles and turtle habitat; 4. In the case of wildlife encounters, including turtles, the following will be implemented: (1) no attempt will be made by any worker at the Project site to chase, catch, divert, follow or otherwise harass wildlife by vehicle or on foot; (2) equipment and vehicles will yield the right-of-way to wildlife; and (3) if a SAR is encountered during activities, work around the SAR shall cease until a biologist is dispatched to assess the situation and appropriate mitigation is applied; 5. To minimize disruptions with wildlife activity at night, the Project construction activities will be limited to daylight hours when possible; 6. Equipment shall be kept in good working order and maintained to minimize noise disturbances; 7. To minimize impacts to wildlife use of watercourses and movement in corridors, construction activities within 30m of a watercourse will be limited where feasible; 8. All workers will adhere to the provincial Nova Scotia <i>Endangered Species Act</i> and federal <i>Species at Risk Acts</i>; 9. Erosion and sediment control measures will be installed and checked regularly during the construction phase and prior to, and after, storm events to confirm they are continuing to operate properly to minimize potential effects to adjacent habitat; and 10. Reduced speeds, dust suppression, and noise and lighting restrictions will be implemented to minimize disturbance to Moose and other wildlife in the PDA. <p><u>Mitigation measures for unplanned events</u></p> <ol style="list-style-type: none"> 1. Equipment shall be kept in good working order and maintained so as to reduce risk of spills/leaks and to avoid water contamination;

Potential Interactions with Wildlife	Proposed Mitigation Measures
	<ol style="list-style-type: none"> 2. Spill response kits must be readily available for each piece of equipment, on site workers are required be knowledgeable on emergency spill response protocols and initiate corrective measures immediately to minimise any impacts to the surrounding environment; 3. Where applicable, secondary containment and limited quantities of chemicals and fuels required to be store on site shall be in an area away from the surrounding terrestrial environment, or direct pathways (i.e., ditches) to the surrounding environment, all chemicals and fuels will be stored in appropriate containers designed for the reduction of potential spills or leaks; 4. Refueling, oiling, and maintenance of equipment will be completed in specifically designated areas located at least 30 m away from any watercourse, wetland, or well to minimize potential effects that could arise in the event of a spill; 5. If contaminated soil is encountered, it will be reported to NSE and managed utilizing the Nova Scotia Contaminated Site Regulations; and, 6. Work entailing use of toxic or hazardous materials, chemicals, or otherwise creating hazard to life, safety of health, will be conducted in accordance with National Fire Code of Canada to minimize the potential for spills or fires.

6.2 Residual Environmental Effects

A residual environmental effect is an environmental effect of a project that remains, or is predicted to remain, after mitigation measures have been implemented (GOC 2022). The Project has the potential to cause short-term, reversible disturbances of foraging or basking habitat for turtles during construction and decommissioning due to increased human presence, noise and anthropogenic footprint. The effects of the Project activities on terrestrial wildlife are expected to be limited to only the Project footprint and disturbance of fauna habitat as a result of the Project will be minimized through turbine and infrastructure siting and by employing the proposed mitigation measures. Noise associated with the construction may deter wildlife, but potential effects are expected to be short term. With the proposed mitigation, residual interactions of the Project with terrestrial fauna species are anticipated to be short in duration and to not be substantive, as they are limited to construction and reclamation phases and are already occurring already in an area with ongoing anthropogenic activities including, but not limited to agriculture and forestry.

In consideration of the above and planned mitigation, the residual environmental effects of the Project on turtles or turtle habitat is considered to be negligible in terms of the significance of the environmental effect. A significant environmental effect would result if a considerable change to turtle populations such as a decline in abundance and/or a change in distribution, beyond which natural recruitment (i.e., reproduction and immigration from unaffected areas) would not return the population to its former level within several generations. No follow-up or monitoring is proposed to monitor environmental interactions specific to turtles and turtle habitat, unless required under permit from NSECC.

In addition, the Project layout was designed to minimize interactions with wetlands and water bodies. The effects of the Project activities on turtles are expected to be limited to the approximate Project footprint, as required by the Project objectives. Disturbance of habitat as a result of this Project will be minimized by employing above-mentioned proposed mitigation measures. With the proposed mitigation, the potential for residual interactions of the Project with turtles are anticipated to be short in duration and are not anticipated to be substantive as they are limited to the construction and reclamation phases. The potential for a significant environmental effect on turtles as a result of Project activities is considered to be negligible following the mitigation measures presented above, along with mitigations measures to protect wetland and aquatic habitat. The locations of the WTGs are not within 30 m of wetlands or waterbodies, therefore, potential impacts as a result of Project activities during the operational phase of the Project is considered to be minimal.

6.3 Cumulative Environmental Effects

Cumulative effects are changes to the environment that are caused by an action in combination with other past, present and future human actions (GOC 2022). Specific to the nature of the undertaking, cumulative effects are combined impacts that may occur when wind power projects or other types of projects are located in the same region (NSECC 2021). The nearest existing wind farm is approximately 9 km from the Project and is within a different secondary watershed from the PDA. As a result, the potential for interaction between the residual effects of the projects is considered to be unlikely.

Without the above proposed mitigation measures, cumulative impacts to watercourses that may support turtle habitat downstream of the PDA could result from the increased number of vehicles and use of site access roads in addition to the existing site uses. The above mitigation measures were carefully developed to prevent residual impacts to watercourses as a result of the Project.

Summary and Conclusions

The information provided in this document is based on the currently available design/planning information and existing environment information obtained during focused field surveys conducted throughout 2021 and 2022. As previously discussed, the Project layout was designed to attempt to minimize interactions with wetlands. Care will be taken to avoid potential habitats for turtles, including wetlands and watercourses.

The Project has been sited to minimize the potential impact of the Project on natural landscapes and undisturbed natural habitats by selecting lands previously impacted by anthropogenic activities. In this case, the majority of watercourse and wetland crossing crossings within the PDA have established crossings that are currently used as access roads and trails. In order to mitigate risk to turtles and turtle habitat, WTGs were set back at least 30 m from watercourses and wetlands where feasible. During the construction of the collector network, care will be taken to avoid watercourses and wetlands, and all attempts will be made to span these habitats with poles. Best management practices for erosion and sediment control will be implemented to monitor potential impacts on watercourses. Overall, transitioning to renewable energy will help reduce the effects of climate change. This may positively impact the long-term population growth and viability of fish populations in Nova Scotia.

This report has been prepared for the environmental assessment and associated Addendum of the Westchester Wind Project. The Project is expected to provide renewable electricity to Nova Scotia and support Nova Scotia Power in attaining its future renewable energy targets.

Closure

This report was prepared by Dillon Consulting Limited (Dillon) for Natural Forces Developments Limited Partnership (the Proponent) on behalf of the Westchester Wind Limited Partnership, in support of the Westchester Wind Project Addendum (2022). 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.

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