

Report

Natural Heritage Assessment Report

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Table of Concordance

The following concordance table cross-references the contents of this Natural Heritage Assessment with requirements identified in O. Reg. 359/09 so that the information can be easily found within this report.

O. Reg. 359/09 Section Reference	O. Reg. 359/09 Requirement	Natural Heritage Report Section
Section 25	Conduct a Natural Heritage Records Review	Section 2
Section 26	Conduct a Natural Heritage Site Investigation	Section 3
Section 27	Determine if natural features are significant (Evaluation of Significance)	Section 4
Section 28	Applicant Attestation	Appendix B
Section 38(2)	Class 3 solar facility projects cannot be located within 50 m of a provincially significant wetland, an ANSI (earth science or life science), a significant woodland, SWH, provincial park, or conservation reserve, unless an EIS is prepared in accordance with the Natural Heritage Assessment Guide	Section 5

Glossary

ANSI	Area of Natural and Scientific Interest
APRD	Approvals and Permitting Requirements Document
CLUPA	Ontario Crown Land Use Policy Atlas
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
cSWH	Candidate Significant Wildlife Habitat
EC	Environment Canada
ELC	Ecological Land Classification
EIS	Environmental Impact Study
EoS	Evaluation of Significance
EPA	Environmental Protection Act
ESA	Endangered Species Act
FIT	Feed-in Tariff
HVA	Highly Vulnerable Aquifers
IBA	Important Bird Areas
IESO	Independent Electricity System Operator
kW	Kilowatt
LIO	Land Information Ontario
MBCA	Migratory Birds Convention Act
MNR	Ministry of Natural Resources
MECP	Ministry of the Environment, Conservation and Parks
NHA	Natural Heritage Assessment
NHAG	Natural Heritage Assessment Guide
NHIC MaM	Natural Heritage Information Centre Make a Map
NHIC	Natural Heritage Information Center
NHRM	Natural Heritage Reference Manual
OBBA	Ontario Breeding Bird Atlas
OP	Official Plans
ORAA	Ontario Reptile and Amphibian Atlas
PSW	Provincially Significant Wetland
PV	Photovoltaic
REA	Renewable Energy Approval
SAR	Species at Risk
SARA	Species at Risk Act
SARO	Species at Risk in Ontario

SCA	Species Conservation Act
SoCC	Species of Conservation Concern
SWH	Significant Wildlife Habitat
SWHTG	Significant Wildlife Habitat Technical Guide

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1. Introduction

CarbonFree Fort Frances Ltd (CarbonFree) is proposing to develop a 167-megawatt (MW) Class 3 solar photovoltaic (PV) project (“the Project”) adjacent to Highway 611 in the unincorporated township of Miscampbell, approximately 7.5 km northwest of Fort Frances. The Project is located in Ecodistrict 5S-2 within the Dryden Fort Frances Atikokan MNR District and in the Ministry of Municipal Affairs and Housing (MMAH) Rainy River District.

The Project will require a Renewable Energy Approval (REA) under Ontario Regulation (O. Reg.) 359/09 (as amended in May 2016) – Renewable Energy Approvals under Part V.0.1 of the *Environmental Protection Act* (EPA) (herein referred to as the REA Regulation). Construction is anticipated to start in early 2027, pending receipt of requisite permits and approvals.

This Natural Heritage Assessment (NHA) report has been prepared in partial fulfillment of the REA requirements, specifically those outlined in Sections 24 through 28, 37 and 38 of the REA Regulation, and in accordance with the Natural Heritage Assessment Guide (NHAG) (MNR, 2026). In accordance with Part B2 of the NHAG, the applicant must submit a signed and dated attestation under Subsection 28 (2) of the Regulation to accompany the REA application. The NHA report and completed attestation will be included as part of the overall REA application package to the Ministry of Environment, Conservation and Parks (MECP).

The following sections provide an overview of the REA Regulation related to the NHA, study approach, and report format.

1.1 REA Regulation – Natural Heritage Assessment

The REA Regulation prescribes the requirements for renewable energy projects based on the class of solar facility. As set out in the table of Section 4 of the REA Regulation, the Project meets the requirements of a Class 3 solar facility (i.e., nameplate capacity >10 kW).

The NHA requirements, as outlined in Section 24 of the REA Regulation, consists of a Records Review (Section 25), Site Investigation (Section 26), and where applicable, an Evaluation of Significance (EoS) (Section 27) to confirm the significance of features where the Project Location¹ is in or within 50 m of a provincial park, conservation reserve or natural feature. An Environmental Impact Study (EIS) (Subsections 37(2)(a) and 38(2)(b)) is required where a significant or provincial significant natural feature is identified. An applicant attestation signed and dated by the qualified person (Section 28, Subsections 37(2)(b)(c) and 38(2)(b)(c)) is also required as part of the application for the issuance of a REA, in accordance with Part B2 of the NHAG (MNR, 2026).

¹ “Project Location” is defined in the REA Regulation as “a part of land and all or part of any building or structure in, on or over which a person is engaging in or proposes to engage in the project and any air space in which a person is engaging in or proposes to engage in the project.”

The REA Regulation defines Natural Features as all or part of the following:

- Area of Natural and Scientific Interest (ANSI) (earth science)
- ANSI (life science)
- Wetland (coastal wetland, northern wetland and southern wetland)
- Wildlife Habitat
- Woodland.

Note that as per the definition laid out within the REA, Woodland is defined as being located south and east of the Canadian Shield and is therefore not applicable to this Project location.

1.2 NHA Approach

The following sections include a description of the features that need to be confirmed in or within 50 m of the Project Location. An assessment of Species at Risk² (SAR) is not part of the NHA. Provincially protected SAR will be permitted through the Species Conservation Act (SCA) where necessary.

Species listed under Schedule 1 of the Species at Risk Act (SARA) or on the Protected Species in Ontario (PSO) list under the SCA, 2025 and/or are identified as at risk (Special Concern or higher) by the Committee on the Status of Species at Risk in Ontario (COSSARO), are considered Species of Conservation Concern (SoCC) for the purposes of this report. Consultation with Environment and Climate Change Canada (ECCC) may be required for species listed in Schedule 1, including aquatic species and migratory birds listed in the *Migratory Birds Convention Act* (MBCA), 1994 and that are also listed in Schedule 1.

1.2.1 Provincial Plan Areas

A Records Review was completed to determine whether the Project Location is in or within 1 km of a provincial plan area, i.e., Greenbelt Plan, ORMCP, Niagara Escarpment Plan (NEP), Lake Simcoe Protection Plan.

1.2.2 Provincial Parks and Conservation Reserves

Provincial Parks and Conservation Reserves are protected under the *Provincial Parks and Conservation Reserves Act, 2006*. Renewable energy projects are generally prohibited within these areas, unless they meet the exceptions listed in Section 19 of the Act. Projects that meet the requirements of the *Provincial Parks and Conservation Reserves Act* are subject to an NHA. The confirmation on the presence/absence of Provincial Parks and conservation reserves on and within 50 m of the Project Location is the responsibility of the MECP.

This NHA report reviews whether the Project Location is in or within 50 m of a Provincial park or conservation reserve and a determination will be made in the Records Review (Section 2).

² SAR include species that are designated as Extirpated, Endangered or Threatened and listed on the PSO List (O.Reg. 60/26) made under the SCA, 2025.

If there are no Provincial Parks or Conservation Reserves identified during the Records Review, no further consideration or verification of presence/absence is required.

1.2.3 **Natural Features**

The REA Regulation defines natural features to include all or part of an ANSI (Earth Science or Life Science), wetland (Coastal, Northern or Southern), woodland, and wildlife habitat. As part of the NHA, an assessment and determination on the presence/absence and significance (if applicable) of a natural feature in or within 50 m of the Project Location is required. Each of the natural features to be assessed is described in the subsequent sections.

1.2.3.1 *Area of Natural and Scientific Interest*

MNR recognizes two types of ANSIs based on natural heritage values related to protection, scientific study or education: earth science ANSI and life science ANSI. MNR is responsible for identifying and assessing whether they are provincially, regionally, or locally significant. Only provincially significant ANSIs are protected through the REA Regulation.

This NHA report will review whether the Project Location is in or within 50 m of an Earth Science or Life Science ANSI and a determination made in the Records Review (Section 2). As a general practice, all ANSIs, regardless of designation, will be identified as part of this NHA and MNR will be consulted for further guidance. If there are no ANSIs identified during the Records Review, no further consideration or verification of presence/absence is required.

1.2.3.2 *Wetland*

The REA Regulation defines wetland as *“land such as a swamp, marsh, bog or fen, other than land that is being used for agricultural purposes and no longer exhibits wetland characteristics, that, is seasonally or permanently covered by shallow water or has the water table close to or at the surface, and has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants.”* The REA Regulation further distinguishes a wetland as a

- **Coastal Wetland** – defined in the REA Regulation as *“a wetland that is located on Lake Ontario, Lake Erie, Lake Huron, Lake Superior, Lake St. Clair, St. Mary’s River, St. Clair River, Detroit River, Niagara River or St. Lawrence River; or on a tributary to any of these waterbodies and, either in whole or in part, downstream of a line located two kilometers (km) upstream of the 1:100-year flood line.”*
- **Northern Wetland** – defined in the REA Regulation as *“a wetland located north of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Policy Statement issued under Section 3 of the Planning Act”.*
- **Southern Wetland** – defined in the REA Regulation as *“a wetland located south of the northern limit of Ecoregions 5E, 6E and 7E as shown in Figure 1 in the Provincial Planning Statement issued under Section 3 of the Planning Act”.*

The Northern Wetland definition is applicable to this Project. This NHA report reviews whether the Project Location is in or within 50 m of a wetland. A determination will be made in

the Records Review (Section 2) and Site Investigation (Section 3) and whether an EoS and EIS are required.

1.2.3.3 Wildlife Habitat

The REA Regulation defines wildlife habitat as “*an area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species*”.

The MNR provides specific guidance on identifying and assessing wildlife habitat in the Significant Wildlife Habitat (SWH) Criteria Schedules. No specific Ecoregion Schedule currently exists for Ecoregion 5S and therefore the Significant Wildlife Habitat Technical Guide (SWHTG) has been referenced with SWH criteria from Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) used to supplement this material to assess the site for Candidate SWHs and in the creation of the EoS.

A brief overview of the wildlife habitats to be considered in the NHA is provided below, with more specific details provided in Section 3.3.7.2.

The MNR recognizes five main categories of wildlife habitat, each with several wildlife habitat types (further described in Section 3.3.7.2).

- **Seasonal Concentration Areas of Animals** – Defined as “*areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons*” and areas that are “*localized and relatively small in relation to the area of habitat used at other times of the year*” (MNR, 2010).
- **Rare Vegetation Communities** – Defined as “*areas that contain a provincially rare vegetation community and areas that contain a vegetation community that is rare within the planning area*” (MNR, 2010).
- **Specialized Habitat for Wildlife** – Defined as “*areas that support wildlife species that have highly specific habitat requirements, areas with high species and community diversity, and areas that provide habitat that greatly enhances species’ survival*” (MNR, 2010).
- **Habitat for SoCC** – Defined as “habitats of species that species listed in Schedule 1 under the federal SAR Act and species included in PSO List under the SCA as well as any species currently classified COSSARO. More specifically, SoCC include the following:

- ♦ **Globally Rare Species** – These species are assessed by NatureServe and assigned a global conservation status rank (G-rank) of G1 to G3.
- ♦ **Nationally Rare Species** – These species are designated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered or Threatened.
- ♦ **Provincially Rare Species** – These species are evaluated by COSSARO and assessed under three categories: species evaluated as Special Concern on the; and species that are assigned a provincial (i.e., sub-national) conservation status rank of S1 to S3 and those on the PSO list. There are species that can be found in both categories.
- ♦ **Regionally Rare Species** – These species are not assigned a formal designation; however, they have been recognized as declining within a planning jurisdiction by government and/or non-government authorities.
- ♦ **Conservation Priority Species** – These include priority species that are recognized in government and/or non-government conservation plans and assigned a conservation objective.
- **Animal Movement Corridors** – Defined as “*elongated, naturally vegetated parts of the landscape used by animals to move from one habitat to another*” (MNR, 2000).

1.2.3.4 Woodland

The REA Regulation defines woodland as “*a treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees*”, that is located in Ecoregions 6E and 7E as shown in Figure 1 in the Provincial Planning Statement issued under Section 3 of the *Planning Act* (King’s Printer for Ontario, 2024).

As this Project location falls outside of the applicable definition for a woodland, this will not be considered throughout this NHA report.

1.3 Report Format

The report format is provided below, which includes a summary of the regulatory requirements for each section.

- Records Review – Section 2.
- Site Investigation – Section 3.
- Evaluation of Significance (EoS) – Section 4.
- Environmental Impact Study (EIS) – Section 5.

2. Records Review

A Records Review is required as part of the NHA, as outlined in Subsection 25(1) of the REA Regulation. A search for records is required to determine if the Project Location is on or within 50 m of a Provincial Park, Conservation Reserve and Natural Feature (as defined in Section 1.2).

Publicly available records maintained by government and non-government sources were reviewed. Key information sources included: MNR Fort Frances District, and other non-government organizations.

The following sources were considered but not discussed further as they are not within the jurisdiction of the Project and do not apply to this Project: Municipal Planning Authority, Local Planning Board, Local Roads Board, Local Services Board, Niagara Escarpment Commission, Greenbelt Plan, and ORMCP.

A compilation of all species identified in the Records Review is provided in Appendix A, and includes the source where the information was obtained for each species, scientific names, conservation rank (global, provincial, regional, and priority species) and at-risk status (national and provincial).

An attestation regarding the completeness of the required information and activities relevant to the Records Review were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

2.1 REA Regulation – NHA Records Review

Section 25 of the REA Regulation requires proponents of Class 3 solar projects to conduct a Records Review and prepare a report summarizing the results and determinations made whether the Project Location is in or within 50 m of a:

- Provincial Park or Conservation Reserve; and
- Natural Feature.

The following sections have been prepared to meet these requirements and include:

- The methodology used to complete the Records Review, including a summary of the information sources and data analyzed;
- Results of the Records Review; and
- Summary of the determinations made.

2.2 Records Review Methodology

The following background documents and information sources were reviewed for records related to Provincial Parks, Conservation Reserves and Natural Features on and within 50 m of the Project Location. Hatch Ltd. (Hatch) has queried available desktop resources as described below. Where spatial data is available Hatch has queried areas extending a minimum of 1 km from the Project Location.

2.2.1 Ministry of Natural Resources Records

The following information sources from the Ministry of Natural Resources (MNR) were reviewed for records related to Natural Features and Provincial Parks, Conservation Reserves, within 1 km of the Project Location:

- **Ontario Geohub (GEO) Mapping (Accessed January 18, 2026)** – GEO data is maintained by the MNR and provides key provincial geospatial data about Ontario. Shapefiles obtained from the GEO open datasets were obtained and used to prepare a map showing the presence/absence of Provincial Policy Plan areas, Provincial Parks, Conservation Reserves, and Natural Features on and within 1 km of the Project Location (Rainy River District map layer). The data layers reviewed are provided in Section 2.3. At a minimum the following Ontario Geohub datasets were reviewed:
 - ♦ Wildlife Value Areas and Sites;
 - ♦ Significant Ecological Areas;
 - ♦ Wild Rice Stand;
 - ♦ Forest Resource Inventory;
 - ♦ Areas of Natural and Scientific Interest;
 - ♦ Provincially Tracked Species;
 - ♦ Fish Activity Area and Aquatic Resource Area datasets;
 - ♦ Wetlands; and
 - ♦ Natural Heritage Systems.
- **Natural Heritage Information Centre Make a Map (NHIC MaM) (Accessed January 18, 2026)** – The NHIC MaM is a web application that identifies:
 - ♦ Provincial Parks.
 - ♦ Conservation Reserves.
 - ♦ Natural Features (i.e., ANSIs, wetlands, woodlands, natural heritage systems related to provincial policy plan areas, such as the Niagara Escarpment, Oak Ridges Moraine and Greenbelt Plans).

- ♦ Occurrences of plant communities, wildlife concentration areas and natural areas, as well as SoCC (i.e., rare species). As mentioned in Section 1.2, SAR are not discussed in this NHA and will be assessed separately in the APRD. The NHIC data is organized into 1 km² map squares. The map squares reviewed and that overlap the Project Location, include 15VP5890, 15VP5891, 15VP5892, 15VP5990, 15VP5991, 15VP5992. Species identified in these map squares (excluding SAR) are considered as part of the Records Review and listed in Appendix A.
- **Ontario Crown Land Use Policy Atlas (Accessed January 18, 2026)** – The *Ontario Crown Land Use Policy Atlas* (CLUPA) is an interactive web browser that provides boundaries of crown land use areas and associated land use policies. This interactive map was used to determine the presence/absence of crown land within 1 km of the Project Location. Specifically, Policy ID No. G2581 and G2572 were used to inform the NHA.

2.2.2 ***Atlas of the Mammals of Ontario (Accessed January 18, 2026)***

A review of the Atlas of the Mammals of Ontario (Dobbyn, 1994) was completed in support of the wildlife habitat assessment. A search was completed for mammals whose ranges overlap with the Project and that are listed in the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) or that are considered to be a SoCC. Species considered as part of the Records Review are listed in Appendix A.

2.2.3 ***Ontario Reptile and Amphibian Atlas (Accessed January 18th, 2026)***

A review of the Ontario Reptile and Amphibian Atlas (Ontario Nature, 2024) and interactive range maps were completed. The Atlas provides known ranges of reptiles and amphibian species in Ontario based on historic and current species occurrences. The information is displayed in 10 x 10 km² map squares. The species documented within map squares 15VP59, 15VP68, 15VP58 which overlaps the Project Location, was included in the Records Review and considered in respect of the wildlife habitat assessment. Species documented on the map squares are listed in Appendix A.

2.2.4 ***Important Bird Areas of Canada (Accessed January 18, 2026)***

The Important Bird Areas (IBA) Canada website was reviewed to determine whether any IBAs are in or within 1 km of the Project Location. IBAs are discrete sites that support specific groups of birds such as threatened birds, large groups of birds, and birds restricted by range or by habitat. No IBAs were located within the Project footprint or within 1 km of the Project location.

2.2.5 ***Ontario Breeding Bird Atlas (Accessed January 18, 2026)***

The Ontario Breeding Bird Atlas - 3 (OBBA) (Birds Canada *et al.*, 2026) was reviewed to determine which species have the potential to occur on or within 1 km of the Project Location. The OBBA provides a list of bird species that have been observed within a 10 x 10 km² area during surveys completed between 1981 to 1985, 2001 to 2005, and 2021 to 2025. Species that were documented between 2001 and 2005 were considered as part of the Records

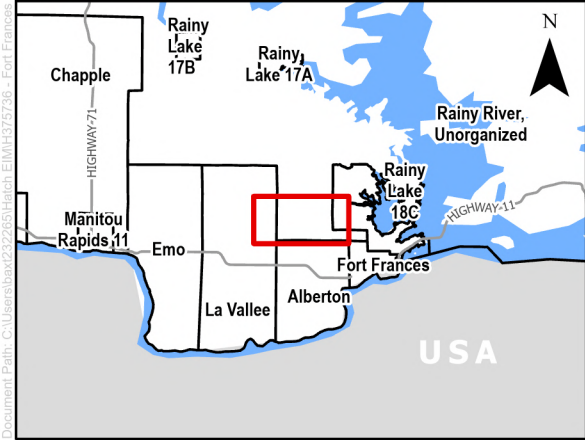
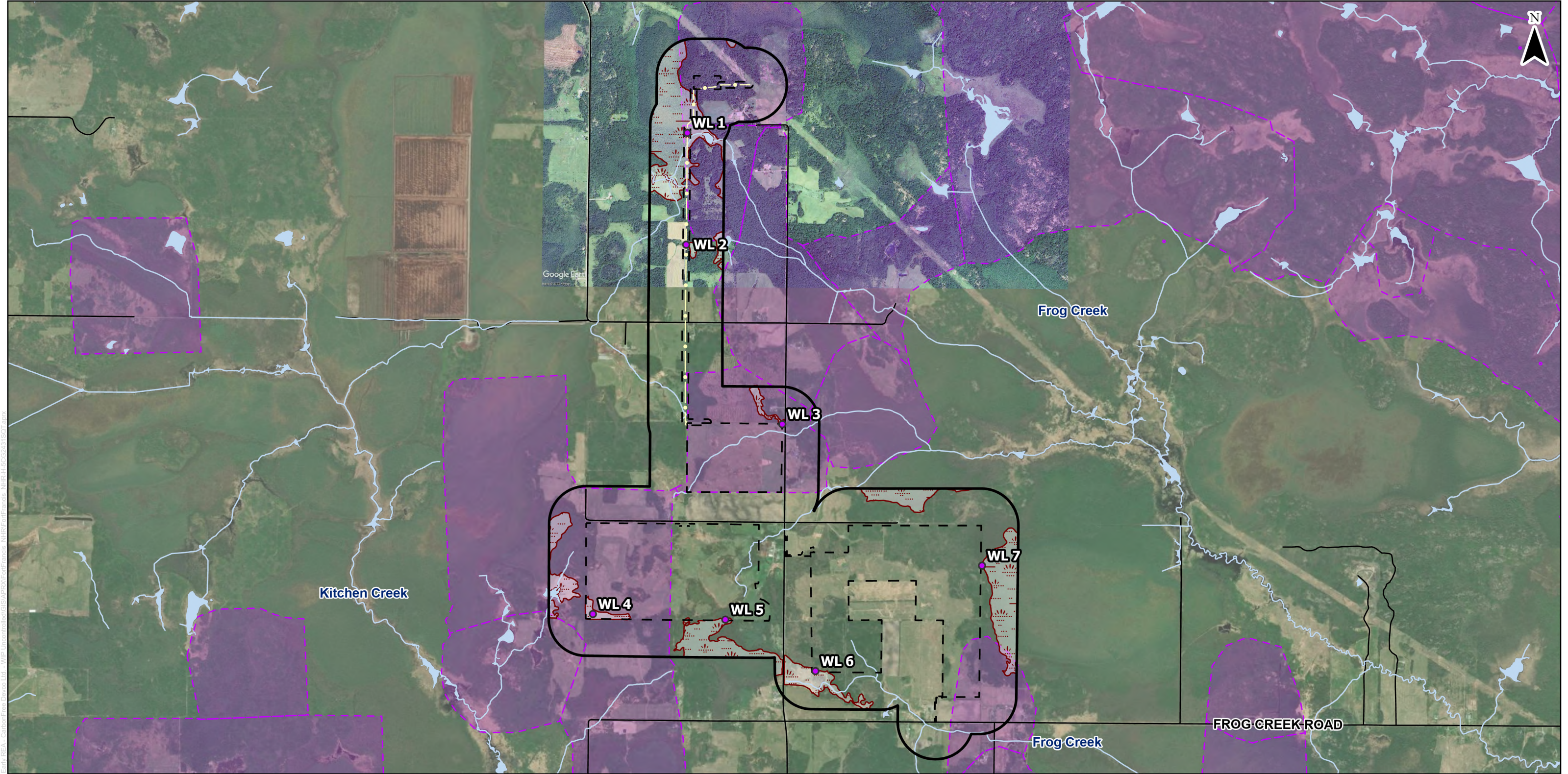
Review. The OBBA map square that overlaps the Project Location are 15TVP58, 15TVP59, 15TVP68, and 15TVP69. The species observed within this map square (between 2001 and 2005) are considered as part of the wildlife habitat assessment and listed in Appendix A.

2.2.6 Ontario Butterfly Atlas (Accessed January 18, 2026)

The Ontario Butterfly Atlas was reviewed to determine which species have the potential to occur on or within 1 km of the Project Location. The Ontario Butterfly Atlas provides a list of butterfly species that have been observed within a 10 x 10 km² map square. The map squares that overlap the Project Location are 15TVP58, 15TVP59, 15TVP68, and 15TVP69. The species observed within this map square are considered as part of the wildlife habitat assessment and listed in Appendix A.

2.3 Records Review Results

A Records Review was conducted in order to determine the presence/absence of Provincial Parks, Conservation Reserves and Natural Features in or within 1 km of the Project Location. The results of the Records Review and determinations made are provided in the subsequent sections and illustrated in Figure 2-1.



LEGEND

- Wetland
- Road
- Proposed Transmission Line
- Watercourse
- Study Area (300m Buffer)
- Waterbody
- Unevaluated Wetland (MNR)
- White-tailed Deer Yard (Stratum 1)

NOTES:

- Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
- Spatial referencing: NAD 1983 UTM Zone 17N
- GoogleEarth 2025 Imagery added for clarity due to cloud cover.

0 500 1,000 2,000
1:30,000 m

PROJECT:		CarbonFree Fort Frances Project - Natural Heritage Assessment			
FIGURE TITLE:		Records Review Results			
CLIENT:		CarbonFree Fort Frances LTD			
DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 2-1	REV NO.: 1		
DATE: 02/04/26	PAGE: 1				

2.3.1 Provincial Plan Areas

The Project Location is not in or within a Provincial Plan area (i.e., NEP), Greenbelt Plan, Oak Ridges Moraine Conservation Plan (ORMCP), as shown in Table 2-1 and Figure 2-1. Verifying the results of the Records Review as it relates to policy plan areas is not required as the Project is outside of these plan areas. Therefore, no further consideration or assessment is required in this NHA as it relates to the NEP, Greenbelt Plan, ORMCP and associated Natural Features.

Table 2-1: Summary of Data Reviewed for Provincial Plan Areas

Information Source	Provincial Plan Areas (NEP, Greenbelt Plan, ORMCP)			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources				
GEO Mapping	N	N	N/A	Environmental Features.
CLUPA	N	N	N/A	Crown Land Use Data layer.

2.3.2 Provincial Parks and Conservation Reserves

The REA Regulation requires a determination on the presence/absence of provincial parks and conservation reserves on and within 1 km of the Project Location. The information sources and data reviewed to make the determinations are provided in Table 2-2.

As shown in Table 2-2, there are no Provincial Parks or Conservation Reserves in or within 1 km of the Project Location. Verifying the results of the Records Review as it relates to Provincial Parks and Conservation Reserves is not required. As these features are not present, they are not subject to a Site Investigation. Therefore, no further consideration or assessment is required in this NHA.

Table 2-2: Summary of Data Reviewed for Provincial Parks and Conservation Reserves

Information Source	Provincial Parks and Conservation Reserves			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources				
GEO Mapping	N	N	N/A	CLUPA datasets, Provincial Parks Regulated dataset, Conservation Reserve dataset, Natural Heritage Area dataset.
NHIC MaM	N	N	N/A	Provincial Park and Conservation Reserve layers.
CLUPA	N	N	N/A	Crown Land Use Data layer

2.3.3 Natural Features

A Records Review was completed to determine presence/absence of Natural Features (as described in Section 1.2.3) in or within 1 km of the Project Location. Confirmed³ provincially significant (i.e., ANSIs, wetlands) or significant natural features (i.e., woodlands, wildlife habitat) are also identified, where found.

2.3.3.1 Earth Science and Life Science ANSI

As shown in Table 2-3, there are no Earth Science or Life Science ANSIs in or within 1 km of the Project Location. As the MNR is responsible for identifying and evaluating the significance of ANSIs, confirmation of presence/absence and field verification is not required. Therefore, no further consideration or assessment is required in this NHA.

Table 2-3: Summary of Data Reviewed for Earth Science and Life Science ANSIs

Information Source	Earth Science and Life Science ANSIs			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources				
GEO Mapping	N	N	N/A	ANSI dataset
Fort Frances District Data	N	N	N/A	ANSI layer
NHIC MaM	N	N	N/A	ANSI layer

2.3.3.2 Wetlands

As shown in Table 2-4 below and Figure 2-1, there are wetlands in and within 1 km of the Project Location. Site Investigations as described in Section 3 were completed to verify the information obtained during the Records Review and determine the presence of wetlands not previously mapped.

Table 2-4: Summary of Data Reviewed for Wetlands

Information Source	Wetlands			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources				
GEO Mapping	Y	Y	Unevaluated mapped wetlands	Wetland dataset
Fort Frances District Data	Y	Y	N/A	Wetland layer
NHIC MaM	Y	Y	Unevaluated and evaluated mapped wetlands	Wetland layer

³ Confirmed provincially significant ANSIs are identified by MNR.

2.3.3.3 Wildlife Habitat

The results of the Records Review are shown in Table 2-5 below and Figure 2-1. Wildlife habitat is present in and within 1 km of the Project Location based on the broad definition in the REA Regulation. While most records searched do not provide specific wildlife habitat information (as defined in Section 1.2.3.3), the broadly defined term provided in the REA Regulation suggests that all lands meet the definition. As such, it is not possible to scope out wildlife habitat at the Records Review stage. Therefore, site Investigations were completed to determine presence/absence of wildlife habitat (as described in Section 1.2.3.3) and more specifically the wildlife habitat types listed in the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017). Species identified in the Records Review (Appendix A) were considered in respect of potential wildlife habitat to assist in focusing Site Investigation surveys.

Table 2-5: Summary of Data Reviewed for Wildlife Habitat

Information Source	Wildlife Habitat			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ministry of Natural Resources				
GEO Mapping	Y	Y	White-tailed Deer Yard (Stratum 1) – Overwintering Yards were identified in and within 50 m of the Project Location.	The following datasets were reviewed: Wetland, Wooded Area, Nesting Site, Breeding Area, Den Site, Feeding Area Wildlife, FRI Wetland, Mast Producing Area, Natural Heritage Area, NHS Area, Nursery Area Wildlife, Resting Area, Significant Ecological Area, Staging Area Wildlife, Travel Corridor Wildlife, Wilderness Area, Wintering Area.
NHIC MaM	Y (possible NHIC species)	Y (possible NHIC species)	No specific wildlife habitat information is available.	NHIC MaM
Non-Government Species-Related Documents				
Atlas of the Mammals of Ontario	Possible	Possible	No wildlife habitat information available. However, mammals whose ranges overlap the Project are considered in respect of potential wildlife habitat.	Species range maps

Information Source	Wildlife Habitat			
	In Project Location (Y/N)	Within 1 km of the Project Location (Y/N)	Description	Data Reviewed
Ontario Reptile and Amphibian Atlas (ORAA)	Possible	Possible	No wildlife habitat information available. However, species recorded within the ORAA map square that overlaps the Project Location are considered in respect of potential wildlife habitat.	ORAA map square 17MH53 (and associated species)
IBA of Canada	N	N	There are no IBAs within a 50 km radius of the Project Location.	IBA web viewer
OBBA	Possible	Possible	No wildlife habitat information available. However, species recorded within the OBBA map square that overlaps the Project Location are considered in respect of potential wildlife habitat.	OBBA map squares 15TVP58, 15TVP59, and 15TVP68, 15TVP69 (and associated species)

2.3.3.4 Species of Conservation Concern

Species identified in the Records Review (Appendix A) were considered in respect of potential wildlife habitat to assist in focusing Site Investigation surveys. Table 2-6 below outlines SoCC's with potential to exist within or utilize the Project Location and adjacent areas based on information contained within the desktop resources listed above.

Table 2-6: Summary of Species of Conservation Concern

SoCC ID Number	Common Name	Scientific Name	SARA	PSO	COSSARO	S-Rank	Source
Birds							
SoCC-01	American White Pelican	<i>Pelecanus erythrorhynchos</i>	-	-	SC	S3B, S34	OBBA
SoCC- 02	Barn Swallow	<i>Hirundo rustica</i>	THR	-	SC	S4B	NHIC
SoCC-03	Black-Billed Magpie	<i>Euphagus cyanocephalus</i>	-	-	-	S2	NHIC
SoCC-04	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	-	THR	S4B	OBBA
SoCC-05	Brewer's Blackbird	<i>Pica hudsonia</i>	-	-	-	S2	NHIC
SoCC-06	Canada Warbler	<i>Cardellina canadensis</i>	THR	-	SC	S5B	OBBA

SoCC ID Number	Common Name	Scientific Name	SARA	PSO	COSSARO	S-Rank	Source
SoCC-07	Dickcissel	<i>Spiza americana</i>	-	-	-	S2M	OBBA
SoCC-08	Eastern Whip-Poor-Will	<i>Antrostomus vociferus</i>	THR	-	SC	S4B	OBBA
SoCC-09	Eastern Wood-pewee	<i>Contopus virens</i>	-	-	SC	S4B	OBBA
SoCC-10	Golden-Winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	SC	S3B	OBBA
SoCC-11	Olive-sided Flycatcher	<i>Contopus cooperi</i>	-	-	SC	S4B	OBBA
SoCC-12	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	-	END	S3	NHIC
SoCC-13	Western Meadowlark	<i>Sturnella neglecta</i>	-	-	-	S1B	OBBA
SoCC-14	Wilson's Phalarope	<i>Phalaropus tricolor</i>	-	-	-	S2B, S4M	OBBA
SoCC-15	Wood Thrush	<i>Hylocichla mustelina</i>	THR	-	SC	S4B	OBBA
Butterflies							
SoCC-16	Monarch	<i>Danaus plexippus</i>	END	-	SC	S4B, S2N	OBA
Reptiles							
SoCC-17	Snapping Turtle	<i>Chelydra serpentina</i>	-	-	SC	S4	ORAA
Mammals							
SoCC-18	American Badger	<i>Taxidea taxus</i>	END	END	END	S1	NHIC
SoCC-19	Eastern Red Bat	<i>Lasiurus borealis</i>	-	END	END	S3	Dobbyn
SoCC-20	Franklin's Ground Squirrel	<i>Spermophilus franklinii</i>	-	-	-	S3	Dobbyn
SoCC-21	Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	END	S3	Dobbyn
SoCC-22	Silver-Haired Bat	<i>Lasionycteris noctivagans</i>	-	END	END	S3	Dobbyn

2.4 Summary of Records Review

A summary of the results of the Records Review and determinations made is provided in Table 2-7. A Site Investigation is required to confirm the findings of the Records Review and determine if any corrections are required or if there are additional features not previously identified. As shown in Table 2-7, there are no Provincial Parks, Conservation Reserves or ANSIs (earth science or life science) in or within 1 km of the Project Location. These features do not need to be verified as their locations are determined and mapped by the provincial government.

Table 2-7: Summary of the Records Review Determinations for the Fort Frances Solar Project

Determination to be Made	Yes/No	Description	Site Investigation Required to Verify Records Review Findings?
Is the Project Location in or within 1 km of a Provincial Park or Conservation Reserve?	No	N/A	¹ Provincial Park: No ¹ Conservation Reserve: No
Is the Project Location in a Natural Feature?	Yes (possible)	Wildlife Habitat (possible)	¹ Earth Science ANSI: No ¹ Life Science ANSI: No Wetland: Yes ² Wildlife Habitat: Yes
Is the Project Location within 1 km of a Natural Feature	Yes (possible)	Wildlife Habitat (possible)	¹ Earth Science ANSI: No ¹ Life Science ANSI: No Wetland: Yes ² Wildlife Habitat: Yes

Notes:

Provincial Parks, Conservation Reserves and ANSIs do not need to be field verified if the Records Review confirmed they are not present.

Based on the definition of wildlife habitat in the REA Regulation, all lands in and within 50 m of the Project Location have the potential to support wildlife habitat. Further studies are required to verify presence/absence and types of wildlife habitats present.

3. Site Investigation and Targeted Studies

3.1 REA Regulatory Requirements

Part IV, Subsection 26 (1) of the REA Regulation requires proponents of Class 3 solar projects to conduct an investigation of the air, land and water within 50 m of the Project Location either by visiting the site or by an alternative investigation of the site. Determinations to be made include:

- Whether the results of the analysis summarized in the Records Review are correct or require correction, and identifying any required corrections;
- Whether any additional natural features exist, other than those that were identified in the Records Review;
- The boundaries, located within 50 m of the Project Location, of any natural feature that was identified in the Records Review or the Site Investigation; and
- The distance from the Project Location to the boundaries of any natural feature that was identified in the Records Review or the site investigation.

An attestation regarding the required information or activities relevant to the Site Investigation and Targeted Studies were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff executing and overseeing the activities is also available in Appendix B.

A checklist of the report requirements, as prescribed in Subsection 26 (3) of the REA Regulation, are provided below, in Table 3-1.

Table 3-1: Site Investigation Requirements under the REA Regulation

Site Investigation Report Requirements	Report Section
A summary of any corrections to the Records Review and the determinations made as a result of conducting the Site Investigation and Baseline Studies.	Section 3.4.2
Information establishing the type of each natural feature identified in the Records Review and in the Site Investigation and Baseline Studies.	Section 3.3
A map showing: 1. All boundaries located within 50 m of the Project Location of any natural feature that was identified in the Records Review, Site Investigation or Baseline Studies. 2. The location and type of each natural feature identified in relation to the Project Location. 3. All distances required to be determined for any natural feature that was identified in the Records Review, the Site Investigation or Baseline Studies.	Figure 3-1
A summary of the methods used to make observations for the purposes of the Site Investigation and Baseline Studies.	Section 3.2

Site Investigation Report Requirements	Report Section
The name and qualifications of the person conducting the Site Investigation and Baseline Studies.	Appendix B
If an investigation was conducted by visiting the site: 1. The dates and times of the beginning and completion of the Site Investigation and Baseline Studies. 2. The duration of the Site Investigation and Baseline Studies. 3. The weather conditions during the Site Investigation and Baseline Studies. 4. Field notes kept by the person conducting the Site Investigation.	Sections 3.2.1.1 and 3.3.1
If an alternative investigation of the site was conducted: 1. The dates of the collection of the data used in the Site Investigation and Baseline Studies. 2. An explanation of why the person who conducted the alternative investigation determined that it was not reasonable to conduct the Site Investigation by visiting the site.	Section 3.2.1.2

3.2 Site Investigation Methodology

3.2.1 Site Investigation Type

The REA Regulation distinguishes between two different site investigation types: a physical site investigation and an alternative site investigation. The details of the type of site investigation completed for the Project are outlined below.

3.2.1.1 Physical Site Investigation

A physical site investigation was completed for the Project Location, on privately-owned lands subject to purchase for the Project. This included walking throughout the Project Location to investigate the site conditions (air, land and water) and verify the presence/absence of Natural Features. Dates and details of the Site Investigation and targeted studies are provided in Section 3.3.1.

3.2.1.2 Alternative Site Investigation

An alternative site investigation was completed for privately-owned lands within 50 m of the Project Location where no access permissions were available. The air, land, water and verification of natural features were assessed from within the Project Location through observations made via binoculars and verification via ground truthing within the Project Location. Alternative Site Investigations involving interpretations including the use of Google Earth's latest and historical imagery (dated June 10, 2025) extended 300 m from the Project Location to assist in determinations regarding Natural Features.

3.2.2 Field Study Methodologies

The methodologies and field studies completed to determine the presence/absence of Natural Features on and within 300 m of the Project Location are provided in the subsequent sections below.

3.2.2.1 *Ecological Land Classification*

Ecological Land Classification (ELC) is the required to be completed as part of the Site Investigation to assist in identifying Natural Features, delineating boundaries and informing the types of field studies that may be required and in order to determine sensitive features present for SoCC, SAR, and SWH.

As the Project sits within the Northwestern portion of the province, the Forest Ecosystem Classification for Northwestern Ontario was adopted (Banton et al., 2009).

Google Earth imagery was reviewed prior to the site visit to map out vegetation communities for field verification. The minimum size for mapping polygons is 0.5 ha based on the ELC protocol. All vegetation communities within 50 m of the Project Location were mapped using ArcGIS and uploaded to a tablet for use in the field. A mobile application called Field Maps for ArcGIS, was used in the field to verify and refine pre-mapped boundaries, as required. Vegetation communities were characterized based on dominant species observed and appropriate ELC codes were assigned to each polygon and habitat based on these criteria.

3.2.2.2 *Wetlands*

A determination of the presence/absence of wetlands in and within 50 m of the Project Location is required. Wetlands identified through the Records Review and any additional wetlands not previously recorded were verified and their boundaries were delineated.

Similar to what was described for ELC, a review of Google Earth imagery was completed to map out any wetlands not identified through the Records Review. All wetlands in and within 50 m of the Project Location were characterized following the protocols established in the Ontario Wetland Evaluation System (OWES) Northern Manual (MNR, 2022).

The size requirement for evaluating wetlands is typically ≥ 2.0 ha⁴ (OWES protocol); however, wetlands as small as 0.5 ha can be evaluated if there is some ecological significance for doing so (e.g., presence/habitat of SAR). Site investigations completed for this Project considered wetlands above 0.5 ha for targeted surveys associated with potential SWH. Where no candidate SWH has identified only wetlands ≥ 2.0 ha was carried forward to an EoS. Wetlands ≥ 2.0 ha within 50 m of the Project Location will be treated as significant. The Project Location will either be amended to setback 50 m from the wetland boundary or in the case of a required transmission line the northern wetland will be assessed through an EIS (See Section 5 of this report).

The mobile application (Field Maps for ArcGIS) was used in the field to verify and refine pre-mapped boundaries and any additional wetlands not previously identified. Wetland indicator species and the 50-50 rule (i.e., 50% wetland species and 50% upland vegetation) were used to determine the wetland boundaries. All flora and fauna observed within the

⁴ In general, wetlands smaller than 2 ha are not evaluated unless they provide important ecological benefit (e.g., SARs, rare species, specialized wildlife habitat). Where an unevaluated wetland is identified and development is not proposed within the wetland itself, the wetland can be treated as provincially significant and conduct an EIS.

wetland were documented. Wetlands were classified based on the dominant vegetation form. Corrections to the Records Review will only apply to wetlands ≥ 2 ha.

3.2.2.3 *Wildlife Habitat*

An assessment of wildlife habitat was completed following the SWHTG with reference to the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017). The MNR recognizes five main categories of wildlife habitat (seasonal concentration areas of animals, rare vegetation communities, specialized habitat for wildlife, habitats for SoCC, and animal movement corridors), each with several wildlife habitat types. Indicator species, ELC requisite ecosites and habitat criteria were used to assess the presence/absence of candidate Significant Wildlife Habitat (cSWH) (i.e., utilizing targeted habitat use studies).

To assist in the identification of cSWH, all incidental wildlife species encountered during the Site Investigation were recorded, as well as any features associated with the provision of wildlife habitat. Wildlife habitat features (e.g., tree cavities, crevices, rock piles, basking sites) were documented throughout the Site Investigation. Observations were also made where disturbance (such as, trail disturbance invasive species, etc.) was noted.

3.2.3 *Wildlife Habitat Studies*

Formal and targeted surveys (e.g., breeding bird surveys (BBS), anuran call surveys, grassland bird surveys) were conducted as part of the Site Investigation, all data was collected via Field Maps. Any incidental observations or evidence of wildlife use outside of structured surveys (e.g., scat, tracks, depredated turtle nests) and their locations were recorded using a handheld GPS. Targeted survey types and methodologies were informed by Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017).

3.2.3.1 *Anuran Call Surveys*

Anuran Call Surveys were conducted in accordance with the Marsh Monitoring Program (MMP) (Bird Studies Canada, 2000). Surveys began one half hour after sunset and ended near midnight. The locations of the amphibian call stations were selected based on available potential habitat such as wetlands, lakes, ponds, rivers, streams, and vernal pools, while trying to maintain a minimum of 500 m apart to reduce individuals or choruses being recorded twice.

The three temperature thresholds outlined by the MMP designed to cover the calling initiation period of most Great Lakes frogs and toads were utilized and are described below.

Where possible, the first visit should coincide with minimum night-time air temperatures of at least 5°C (41°F) and the first or second warm spring shower. The second survey visit should occur with night-time air temperatures of at least 10°C (50°F) and the third visit should coincide with night-time air temperatures of at least 17°C (63°F). Due to late winter conditions and rapidly increasing temperatures conditions, only two surveys are able to be completed

within the minimum nighttime temperatures suggested. Surveys began as soon as feasible following snow melt at the end of May with nighttime temperatures reaching 15°C and concluded at the end of June with nighttime temperatures exceeding 17°C.

In total, seven amphibian surveys stations were completed on the dates presented in Table 3-5.

Each amphibian station was surveyed for 3 minutes, and one of three Call Level Codes was recorded to categorize the intensity of calling activity for each species. The Call Level Codes are adapted from the Ontario Amphibian Road Call Count (Bishop, Pettit, Gartshore, and MacLeod, 1997).

- **Code 1:** Calling individuals can be counted and calls are not simultaneous. In this instance, exact counts can be made of the number of calling individuals and surveyors are asked to record both the code and their count.
- **Code 2:** Calls of individuals can be distinguished but some calling is simultaneous. Under these conditions, an exact count is not possible or expected but the surveyor should be able to make a reliable estimate of the number of individuals calling. Surveyors are asked to record both the code and their count estimate.
- **Code 3:** A full calling chorus with calls continuous and overlapping. Reliable counts and even estimates are unrealistic at this level of calling intensity. No counts are requested.

3.2.3.2 *Bat Snag Assessment and Acoustic Monitoring*

Snag surveys were conducted following the methodology outlined in the Maternity Roost Surveys (Forests/Woodlands) and Species at Risk Bats Survey Note (MECP, 2022). ELC is used to determine presence of mixed wood forests or deciduous forests that may contain suitable roosting features. Surveys were conducted during the leaf-off period (winter and spring 2025) in order to provide adequate viewing of target roost features and are not obstructed by foliage.

The following criteria were used to assess potential maternity colony roost features within the Project boundaries:

- Tallest snag/cavity tree;
- Exhibits cavities/crevices originating from cracks, scars, knot holes or woodpecker cavities;
- Has the largest diameter breast height (dbh);
- Species that provide good cavity characteristics/habitat (i.e., white pine, maple, aspen, ash, oak); and
- Exhibits early stages of decay (decay Class 1-3).

Acoustic monitors were deployed during the maternal roosting season (June). A total of two Acoustic Recording Units were utilized to collect ultrasonic bat data within the Project Location (Figure 3-1). Recording began at sunset and stopped half an hour after sunrise during the month of June. A biologist experienced in bat acoustic analysis and identification reviewed and analyzed the data.

3.2.3.3 *Breeding Bird Surveys*

BBS were conducted following the OBBA methodology (Ontario Breeding Bird Atlas, 2021). All surveys were conducted between sunrise and five hours after sunrise, within a 150-m circular station, with the surveyor identifying all birds by sight and/or sound. A total of 27 BBS stations were surveyed twice across the Project Location (Figure 3-1) during late June and again in early July.

The methodology requires certain weather conditions to ensure the highest probability of detecting variety and presence/absence of avian species. As a result, surveys were not conducted in thick fog or when winds were >3 on the Beaufort scale (over 19 km/h). The following information was recorded on the data sheets:

- All species names in tabular format with the total number of individuals observed;
- Relative distance to the observer (within 0 to 50 m, 50 to 100 m or greater than 100 m);
- Breeding evidence recorded;
- Any SAR species, location, breeding evidence, and general behaviour; and
- Sampling details (date, surveyor, location, mapping, etc.).

3.2.3.4 *Grassland Bird Surveys*

Both Eastern Meadowlark (*Sturnella magna*) and Bobolink (*Dolichonyx oryzivorus*) are grassland avian SAR that inhabit similar open grass dominated terrestrial habitats primarily in the form of abandoned or fallow fields as well as active agricultural hayfields. However, due to the location of the Project, Eastern Meadowlark are not expected to be present as their range extent does not exceed past the Eastern Lake Superior shoreline (Environment and Climate Change Canada, 2022). Western Meadowlark (*Sturnella neglecta*), however, do overlap with the Project Location. This species is not a listed SAR and, therefore, focus was placed on Bobolink presence and suitable habitat within the Project Location.

A map of the survey station locations is shown in Figure 3-1. For the purposes of these surveys, any area greater than 2 ha in size with <25% tree cover and the presence of terrestrial grass or herbaceous vegetation, as informed by the Eastern Meadowlark General Habitat Description document (MECP, 2025) was considered potential habitat. Furthermore, a Habitat Suitability Index (HSI) was developed and outlined within the Recovery strategy for the Eastern Meadowlark in Canada (Environment and Climate Change Canada, 2022). For Eastern Meadowlark, the HSI indicates optimal breeding habitat consisted of dense grasses

of moderate height (12.5 to 35 cm), low shrub cover (<5% preferred, >35% not generally used) and low forb cover with adequate perches present. Ideal vegetation height for nesting was found to be 25 to 50 cm while heights of 10 to 30 cm were found to be ideal for resting within breeding habitat. Accordingly, the survey locations were selected based on the criteria listed below:

- Eastern Meadowlark were listed as 'Threatened' on SARA Schedule 1 in November, 2017. Eastern Meadowlark habitat preferences include moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas with small trees, shrubs or fence posts are used as elevated song perches (MNR, 2019a).
- Bobolink were listed as 'Threatened' on SARA Schedule 1 in November, 2017. Bobolink habitat preferences include tallgrass prairies, open meadows, and hayfields, building their small nests on the ground in dense grasses and forbs (MNR, 2019b).

The survey methodology followed the MNR Survey Protocol for Eastern Meadowlark (MNR, 2013). The protocol utilizes a point count survey methodology at locations with appropriate HSI breeding habitat. Desktop research and on-site investigations identified suitable habitat for survey locations, which included the following ELC polygon types:

- OAGM1: Open Agriculture – Medium-Mineral Annual Row Crops;
- OAGM2: Open Agriculture – Medium Mineral Perennial Cover Type;
- MASM1-1: Marsh – Cattail Mineral Shallow Marsh Type and
- MEFM4: Fresh – Moist Forb Meadow Ecosite, Open Graminoid Meadow Type.

Surveys were conducted during the appropriate breeding season (summer) when birds were singing and expected to defend their territories. Surveys were repeated three times at evenly spaced intervals throughout the survey period. Due to the potential presence of both SAR species, the ideal timing window for targeted surveys according to the Ontario Survey Protocol is between May 15 and July 3 (MNR, 2013). Thus, surveys were completed during this timeframe to account for both species:

- Surveys were conducted in conditions with good visibility, little to no precipitation, and during wind conditions of a maximum of three on the Beaufort wind scale (wind speed not exceeding 12 km/h).
- The protocol requires one-point count (200 m fixed radius) to cover a potential area of 12.6 ha of suitable habitat. For the purposes of this project, point count radii and transect widths were reduced to 150 m to align with the OBBA.

- Surveys were conducted between sunrise and concluded 4 hours after sunrise, as per the protocol guidelines.
- Surveys were repeated three times during the determined survey period to provide sufficient data for determining presence/absence of these species.

3.3 Site Investigation Results

The results of the Site Investigation are discussed in the following sections and are intended to fulfill the requirements of the REA Regulation. A map showing the vegetation communities and natural features documented during the Site Investigation are provided in Figure 3-1 and Figure 3-2 and summarized in the following sections.

3.3.1 Site Investigation Details

The details of the site investigation related to the dates, times and weather conditions are provided in Table 3-2 and are intended to satisfy the requirements under Subsection 26 (3) of the REA Regulation. Weather conditions are based on the weather network results for Fort Frances, Ontario.

Table 3-2: Site Investigation Details – Dates, Times and Weather Conditions

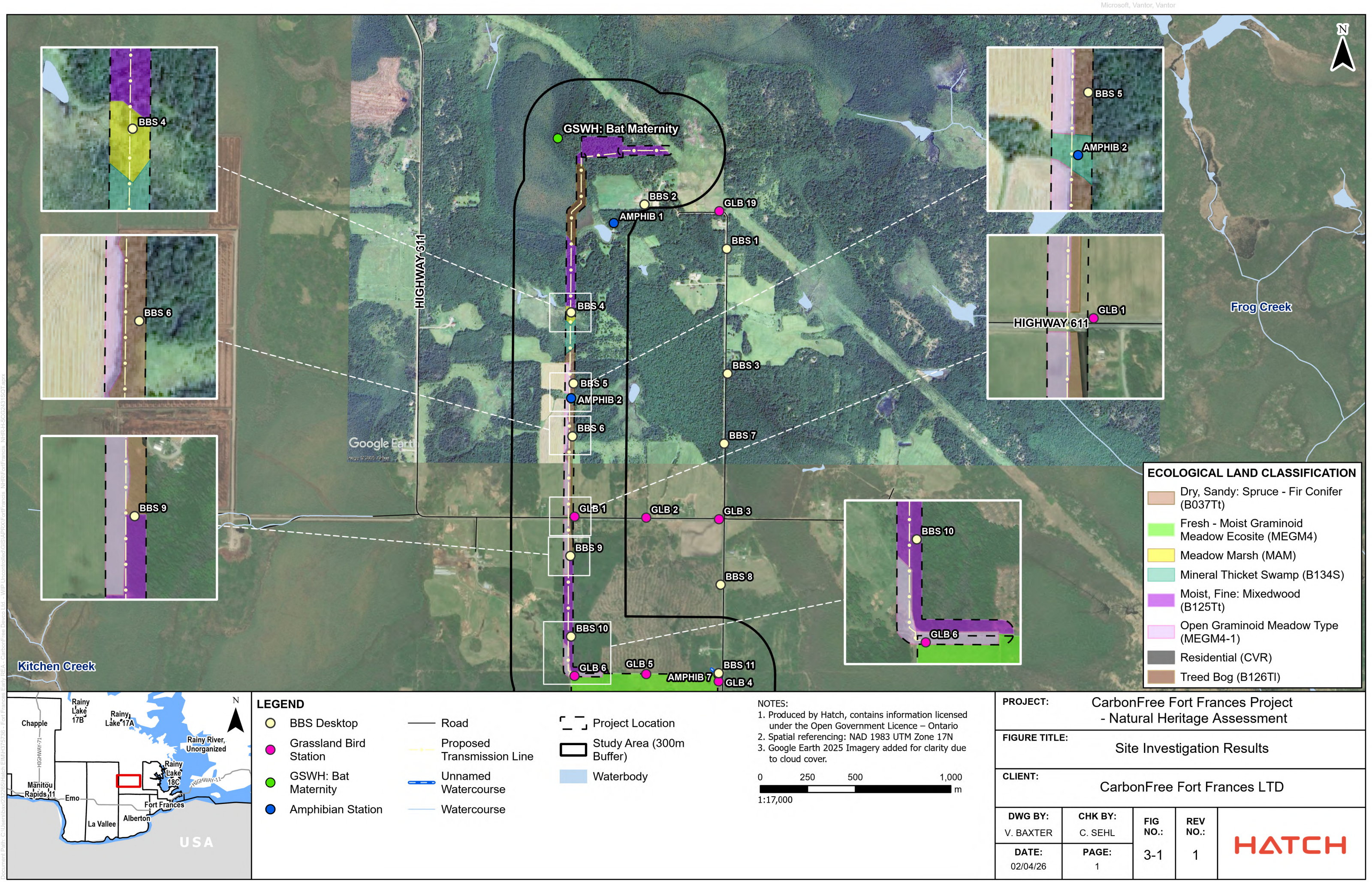
Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hr)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
May 27, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	6:35	13:30	5	9	1	5	0
May 28, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	20:30	22:40	2	10	0	10	0
May 29, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	7:00	11:30	3.5	11	1	5	0
June 5, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	7:00	11:00	3	13	0	10	0
June 6, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	6:30	9:30	3	15	1	15	0

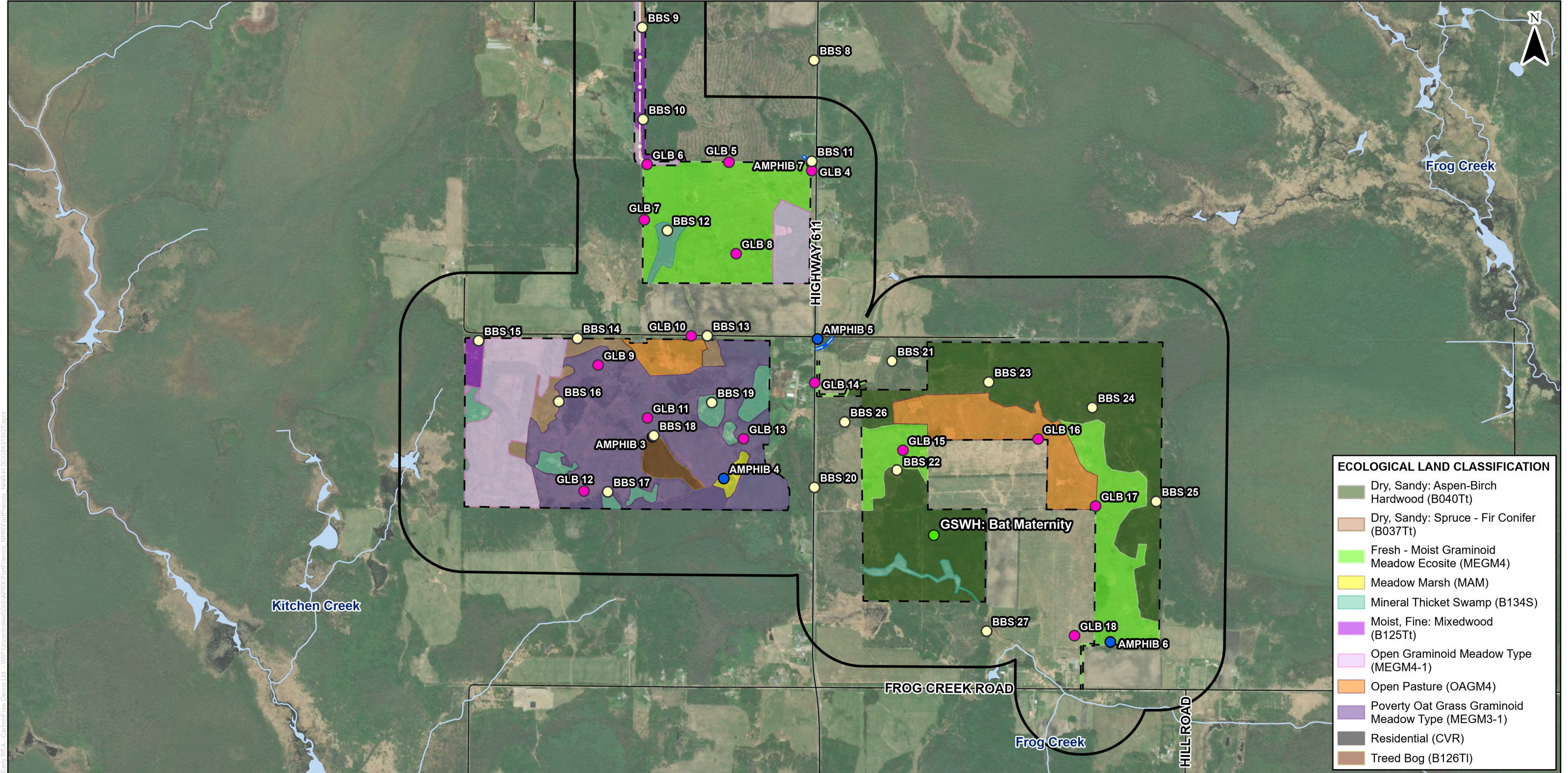
Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hr)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
June 25, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	6:27	14:00	6.5	14	1	35	0
June 26, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	6:30	13:30	6.5	19	1	20	0
July 9, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	6:45	14:15	8	17	0	0	0
July 10, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:00	13:30	6.5	19	1	100	0

3.3.2 Breeding Bird Survey Results

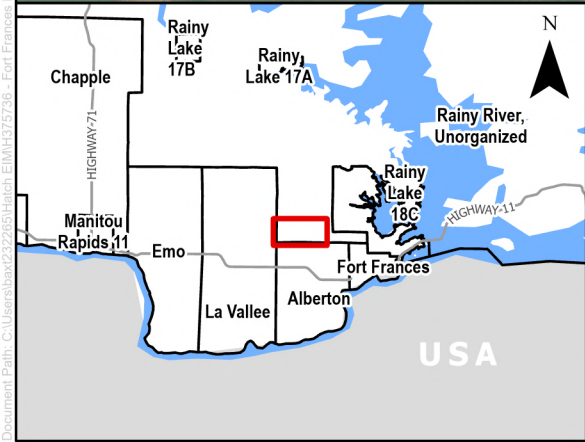
Surveys were conducted during the breeding season (May 24 to July 10) and took place on June 25-26 and July 9-10 to capture breeding evidence and species composition of birds utilizing the Project Location. As depicted in Figure 3-1, a total of 27-point count stations were placed strategically throughout the Project Location in various habitat types to capture as many species as possible. As a result, a total of 60 species were detected during the survey period. Table 3-3 outlines the species detected during BBS.

Although species such as Savannah Sparrow (*Passerculus sandwichensis*) were detected throughout the Project Location; however, these observations were largely made in areas that do not meet the criteria for Open Country Bird Breeding Habitat such as agricultural lands being used for hay or livestock pasture.





ECOLOGICAL LAND CLASSIFICATION	
	Dry, Sandy: Aspen-Birch Hardwood (B040Tt)
	Dry, Sandy: Spruce - Fir Conifer (B037Tt)
	Fresh - Moist Graminoid Meadow Ecosite (MEGM4)
	Meadow Marsh (MAM)
	Mineral Thicket Swamp (B134S)
	Moist, Fine: Mixedwood (B125Tt)
	Open Graminoid Meadow Type (MEGM4-1)
	Open Pasture (OAGM4)
	Poverty Oat Grass Graminoid Meadow Type (MEGM3-1)
	Residential (CVR)
	Treed Bog (B126Tt)



LEGEND	
	BBS Desktop
	Grassland Bird Station
	GSWH: Bat Maternity
	Amphibian Station
	Proposed Transmission Line
	Road
	Unnamed Watercourse
	Watercourse
	Project Location
	Study Area (300m Buffer)
	Waterbody

NOTES:

1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario

2. Spatial referencing: NAD 1983 UTM Zone 17N

0 250 500 1,000
1:17,000 m

PROJECT:		CarbonFree Fort Frances Project - Natural Heritage Assessment			
FIGURE TITLE:		Site Investigation Results			
CLIENT:		CarbonFree Fort Frances LTD			
DWG BY:	CHK BY:	FIG NO.:	REV NO.:		
V. BAXTER	C. SEHL				
DATE:	PAGE:	3-1	1		
13/04/26	2				

In addition to species detected during standardized breeding bird survey point counts, a single observation of a Red-headed Woodpecker (*Melanerpes erythrocephalus*) was detected outside of these surveys, which is considered an incidental and is included in Table 3-3.

Table 3-3: Breeding Bird Survey Results

Common Name	Scientific Name	SARA	PSO	SoCC
Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	
American Crow	<i>Corvus brachyrhynchos</i>	-	-	
American Goldfinch	<i>Spinus tristis</i>	-	-	
American Kestrel	<i>Falco sparverius</i>	-	-	
American Robin	<i>Turdus migratorius</i>	-	-	
Barn Swallow	<i>Hirundo rustica</i>	THR	-	Y
Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	
Black-billed Magpie	<i>Pica hudsonia</i>	-	-	
Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	
Black-throated Green Warbler	<i>Setophaga virens</i>	-	-	
Blue Jay	<i>Cyanocitta cristata</i>	-	-	
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	-	Y
Boreal Chickadee	<i>Poecile hudsonicus</i>	-	-	
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	-	-	Y
Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	
Brown Creeper	<i>Certhia americana</i>	-	-	
Brown-headed Cowbird	<i>Molothrus ater</i>	-	-	
Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	-	-	
Chipping Sparrow	<i>Spizella passerina</i>	-	-	
Common Grackle	<i>Quiscalus quiscula</i>	-	-	
Common Raven	<i>Corvus corax</i>	-	-	
Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	
Downy Woodpecker	<i>Dryobates pubescens</i>	-	-	
Eastern Bluebird	<i>Sialia sialis</i>	-	-	
Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	
Eastern Wood-Pewee	<i>Contopus virens</i>		-	Y
European Starling	<i>Sturnus vulgaris</i>	-	-	
Hairy Woodpecker	<i>Dryobates villosus</i>	-	-	
Hermit Thrush	<i>Catharus guttatus</i>	-	-	
Indigo Bunting	<i>Passerina cyanea</i>	-	-	

Common Name	Scientific Name	SARA	PSO	SoCC
Killdeer	<i>Charadrius vociferus</i>	-	-	
Least Flycatcher	<i>Empidonax minimus</i>	-	-	
Merlin	<i>Falco columbarius</i>	-	-	
Mourning Warbler	<i>Geothlypis philadelphia</i>	-	-	
Nashville Warbler	<i>Leiothlypis ruficapilla</i>	-	-	
Northern Flicker	<i>Colaptes auratus</i>	-	-	
Northern Parula	<i>Setophaga americana</i>	-	-	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	-	-	
Ovenbird	<i>Seiurus aurocapilla</i>	-	-	
Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	
Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	
Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	
Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	
Sandhill Crane	<i>Antigone canadensis</i>	-	-	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-	
Sedge Wren	<i>Cistothorus stellaris</i>	-	-	
Song Sparrow	<i>Melospiza melodia</i>	-	-	
Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	
Tree Swallow	<i>Tachycineta bicolor</i>	-	-	
Turkey Vulture	<i>Cathartes aura</i>	-	-	
Veery	<i>Catharus fuscescens</i>	-	-	
White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	
Winter Wren	<i>Troglodytes hiemalis</i>	-	-	
Wilson's Snipe	<i>Gallinago delicata</i>	-	-	
Wood Thrush	<i>Hylocichla mustelina</i>	-	-	Y
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	
Yellow Warbler	<i>Setophaga petechia</i>	-	-	
Incidental				
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	-	Y

3.3.3 Grassland Bird Survey Results

Surveys were conducted as outlined in Table 3-4 during May and June 2025 to capture various potential grassland bird species within the Project Location. As depicted in Figure 3-1, a total of 19 survey locations were placed in areas thought to provide suitable habitat. All

19 stations were surveyed three times during the survey window (May 15 to July 3); with one target grassland bird species identified.

Table 3-4: Grassland Bird Survey Results Summary

Date	Site Investigators	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)	
Survey 1								
May 27, 2025	A. Nerino, C. Lewis	2	Bobolink observed/heard flying throughout area.	6:18	12	6	0	
		16	Site moved due to cattle at original site location. No target grassland bird species observed.	9:00	17	6	0	
		19	No target grassland bird species observed. Not suitable grassland bird habitat due to lack of long grass, exposed soil, no forbs.	5:55	12	6	0	
		1	No target grassland bird species observed.	6:22	12	6	0	
		3		6:10	12	6	0	
		4		6:32	12	6	0	
		5		6:43	12	6	0	
		6		6:47	13	6	0	
		7		6:58	13	6	0	
		8		7:19	13	6	0	
		9		7:45	13	6	0	
		10		7:36	13	6	0	
		11		7:56	15	6	0	
		12		8:04	15	6	0	
		14		8:23	15	6	0	
		15		8:40	17	6	0	
		17		9:06	17	6	0	
		18		9:20	17	6	0	
		May 30, 2025		13	6:01	14	11	0
		Survey 2						
June 5, 2025	A. Nerino, C. Lewis	2		Three Bobolink observed flying/landing throughout area, additional birds heard singing at adjacent tree line.	7:14	12	12	0
		3	Two male Bobolink observed flying/landing throughout area.	6:50	12	12	0	

Date	Site Investigators	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
June 6, 2025	T. Simpanen, A. Nerino	1	No target grassland bird species observed.	7:03	12	12	0
		4		7:19	12	12	0
		5		7:30	12	12	0
		6		7:45	12	12	0
		7		7:50	13	12	0
		8		8:06	13	12	0
		9		8:18	13	12	0
		10		9:18	13	12	0
		11		8:45	15	12	0
		12		8:35	15	12	0
		13		9:00	15	12	0
		19		No target grassland bird species observed. Not suitable grassland bird habitat due to lack of long grass, exposed soil, no forbs.	6:38	12	12
		16	Bobolink heard/observed flying and landing throughout area.	8:20	15	9	0
		17	Two Bobolink observed/heard flying throughout area.	8:10	15	9	0
		14	No target grassland bird species observed.	7:50	15	9	0
		15		8:35	15	9	0
		18		9:00	15	9	0
Survey 3							
June 25, 2025	T. Simpanen, A. Nerino	1	Bobolink heard/observed flying through westernmost field (Point 15).	7:54	12	4	0
		2	Bobolink heard/observed flying and singing from adjacent tree line.	6:41	12	4	0
		10	No target grassland bird species observed. Bobolink heard singing in nearby suitable habitat.	9:58	14	4	0
		3	No target grassland bird species observed.	6:30	12	4	0
		4		7:21	14	4	0
		5		7:30	14	4	0
		6		8:18	14	4	0
		7		8:24	14	4	0
		8		8:40	14	4	0
		9		9:08	14	4	0

Date	Site Investigators	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
June 26, 2025		11		9:42	14	4	0
		12		9:26	14	4	0
		19	No target grassland bird species observed. Not suitable grassland bird habitat due to lack of long grass, exposed soil, no forbs.	6:45	12	10	0
		16	Bobolink heard singing in field to south.	8:10	19	13	0
		17		8:00	19	13	0
		14	No target grassland bird species observed.	9:39	19	18	0
		15		8:39	19	15	0
		18		7:40	18	4	0

3.3.4 Anuran Call Survey Results

Surveys were conducted as outlined in Table 3-5 during May and June 2025 to capture various potential breeding amphibian species within the Project Location. As depicted in Figure 3-1 and Figure 3-2, a total of seven survey locations were placed in areas thought to provide suitable habitat. All seven stations were surveyed twice during the survey window (May 15 to June 30); with four species recorded. Calling codes ranged from 1 to 3, with Spring Peepers and Gray Tree Frog both reaching the highest code level of 3 during both surveys.

Table 3-5: Anuran Survey Results Summary

Date	Site Investigator(s)	Station	Species Detected	Calling Code (1-3)	Start Time (24 hr)	End Time (24 hr)	Weather Conditions			
							Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
Survey 1										
May 27, 2025	C. Lewis, A. Nerino	2	Boreal Chorus Frog, Spring Peeper	1 (Both)	21:48	21:51	14	0	50	0
		3	Gray Tree Frog, Spring Peeper	3 (Both)	21:18	21:21	14	0	70	0
		4	Gray Tree Frog, Spring Peeper	3 (Both)	21:24	21:27	14	0	60	0

Date	Site Investigator(s)	Station	Species Detected	Calling Code (1-3)	Start Time (24 hr)	End Time (24 hr)	Weather Conditions			
							Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
		5	Gray Tree Frog, Spring Peeper	3 (Both)	22:07	22:10	14	0	40	0
		6	Spring Peeper	2	20:55	20:58	15	0	70	0
		7	Gray Tree Frog, Spring Peeper	2 (Both)	22:01	22:04	14	0	40	0
Survey 2										
June 25, 2025	T. Simpanen, A. Nerino	1	Gray Tree Frog, Boreal Chorus Frog, Spring Peeper	3 (Both)	22:40	22:43	17	0	80	0
		2	Gray Tree Frog	1	22:22	22:25	17	1	90	0
		3	Gray Tree Frog, Boreal Chorus Frog, Spring Peeper	2 (Both)	21:56	21:59	17	1	100	0
		4	Spring Peeper	3	22:06	22:09	17	1	80	0
		5	No species detected.	N/A	22:58	23:01	17	0	80	0
		6	Gray Tree Frog, Boreal Chorus Frog, Spring Peeper	2 (all)	23:05	23:08	17	1	70	0
		7	Gray Tree Frog, Spring Peeper	3 (Both)	22:51	22:54	17	0	80	0

Based on the results and night-time temperatures recorded during surveys, it is likely that all present species were documented during the surveys completed as early season breeding populations such as Spring Peeper (*Pseudacris crucifer*) and Chorus Frog (*Pseudacris maculata*) documented during the surveys and Green Frog and Bullfrog largely absent from northwestern Ontario in areas with little open water habitat.

3.3.5 Bat Maternity Roost and Monitoring Results

A limited number of suitable snags were identified within the Project Location (less than ten snags per hectare). However, two features were identified to have some potential for roost activities and, thus, monitors were placed to determine presence/absence of bat species

within the area in an attempt to inform the Project. Table 3-6 below outlines the results of the acoustic monitoring conducted from June 4 to 30, 2025, within the Project Location to assess activity levels and presence/absence of bat species.

Table 3-6: Bat Acoustic Results Summary

Species	Scientific Name	PSO Status	Unit 1	Unit 2	Total All Units (Combined)
Big Brown Bat	<i>Eptesicus fuscus</i>	-	27	24	51
Eastern Red Bat	<i>Lasiurus borealis</i>	END	5	1	6
Hoary Bat	<i>Lasiurus cinereus</i>	END	78	87	165
Little Brown Myotis	<i>Myotis lucifugus</i>	END	3	4	7
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	END	90	86	176
Unknown (NoID)	N/A	N/A	21	91	112
Total Counts (All Species)			224	293	517

A total of five bat species were detected during the monitoring period. 'Unknown' are recordings that could not be attributed to or narrowed down to the species level as call structure was noticeably weak or did not have enough call notes to confirm down to the species level but are distinct from noise files. Majority of the bat activity was attributed to Silver-haired Bats (90 detections) at Bat Unit 1, and Hoary Bats (87 total detections) at Bat Unit 2, closely followed by Silver-haired Bats (86 total detections). During the monitoring period, activity was captured and a higher number of bat passes were recorded during the end of the month, specifically June 22, and June 27 to 30, 2025. This is thought to be aligned with increases in insect abundance which resulted in opportunities for heavier foraging activity during the end of June. It is unlikely a maternal roost feature, rather, it is more likely attributed to activity from a few bats visiting the area for foraging purposes.

3.3.6 Ecological Land Classification

The Project is situated on multiple private properties historically and currently used for agricultural, homesteading, and residential usage. ELC was carried out during the appropriate growing season, on July 9 and 10, 2025. Field verification included species inventories (trees, shrubs, vascular plants, rare plants, ground cover, etc.) and characterization of each vegetation community to inform the Project. Additional focus was placed on grassland habitats as this community type is varied and abundant throughout the Project Location. Specialized graminoid and grass identification took place in order to rank and assess the quality of the grasslands throughout the Project Location. In addition, forested communities were characterized similarly by using species abundance and dominance (treed environments). The topography within and surrounding the Project Location is predominately flat with little change in elevation overall.

The Project Location boundaries displays varied levels of disturbance based on the activities from agriculture and farming within this area. Patches of residual forest and woodlands exist

along the boundaries and edges of the Project Location, with few large woodlots intersecting the boundaries.

A number of wetlands interact and are contained within the Project Location, as seen in Figure 3-2. Additional wetlands were identified during site investigations which not previously identified during the Record Review.

The Project Location is a mixture of multiple property owner parcels, predominantly open grassland meadows, open pasture, mixed and deciduous forest types, and riparian areas. Pockets of wetlands fall within the Project Location in scattered configurations, as seen in Figure 3-1.

Approximately six wetlands interact with the Project Location, which includes four types: thicket, swamp, marsh, and bog. Majority of the wetlands within the Project Location are mineral thickets comprising in dominance of Speckled Alder (*Alnus incana*).

A summary of the ELC communities identified in and within 50 m of the Project Location is provided in Table 3-7.

Table 3-7: Summary of ELC Communities on and Within 50 m of the Project Location

ELC Community	ELC Code	ELC Ecosite	On Project Location/ Component	Within 50 m of Project Location/ Component	Community Description
Coniferous Woodland	B037Tt	Dry, Sandy: Spruce - Fir Conifer	✓ Connection Line and Solar Facility	✓ Connection Line	Dominated by Balsam Fir.
Deciduous Woodland	B040Tt	Dry, Sandy: Aspen-Birch Hardwood	✓ Connection Line and Solar Facility	✓ Connection Line and Solar Facility	Dominated by Trembling Aspen with White Birch.
Mixedwood Woodland	B125Tt	Moist, Fine: Mixedwood	✓ Connection Line and Solar Facility	✓ Connection Line and Solar Facility	Mixed woodland dominated by Trembling Aspen and Balsam Fir.
Meadow (Grassland)	MEGM4-1	Open Graminoid Meadow Type	✓ Connection Line and Solar Facility	✓ Connection Line and Solar Facility	Meadow habitat dominated by Timothy, Red Top and clover.
Meadow (Grassland)	(MEGM3-1)	Poverty Oat Grass Graminoid Meadow	✓ Solar Facility	✓ Solar Facility	Grassland habitat comprised of patches of bare grass from grazing cattle activities and predominantly populated with Poverty Oat Grass. Provides potential habitat for Sharp-tailed Grouse Lek activities.

ELC Community	ELC Code	ELC Ecosite	On Project Location/ Component	Within 50 m of Project Location/ Component	Community Description
Wetland	MAM	Meadow Marsh	✓ Connection Line	✓ Connection Line	Dominated by emergent wetland vegetation.
Wetland	B134S	Mineral Thicket Swamp	✓ Connection Line and Solar Facility	✓ Connection Line and Solar Facility	Dominated by Speckled Alder (<i>Alnus incana</i>).
Wetland	B126TI	Treed Bog	✓ Connection Line and Solar Facility	✓ Connection Line	Dominated by Black Spruce (<i>Picea mariana</i>) with Balsam Fir, Jack Pine, and Lowbush Blueberry, Labrador Tea, and Bog Laurel.
Anthropogenic	CVR	Residential	✓ Connection Line	✓ Connection Line	Residential property within proximity to proposed transmission line.

3.3.7 Confirmation and Assessment of Natural Features

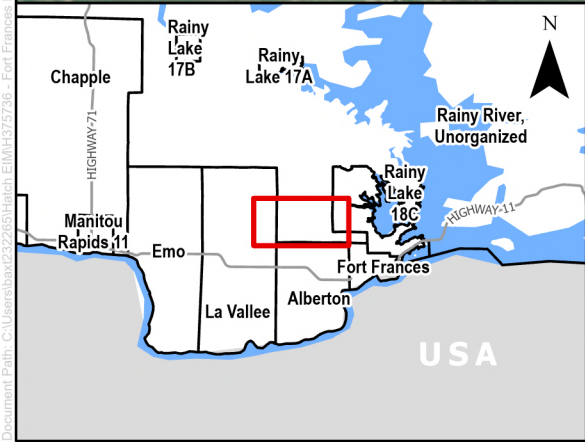
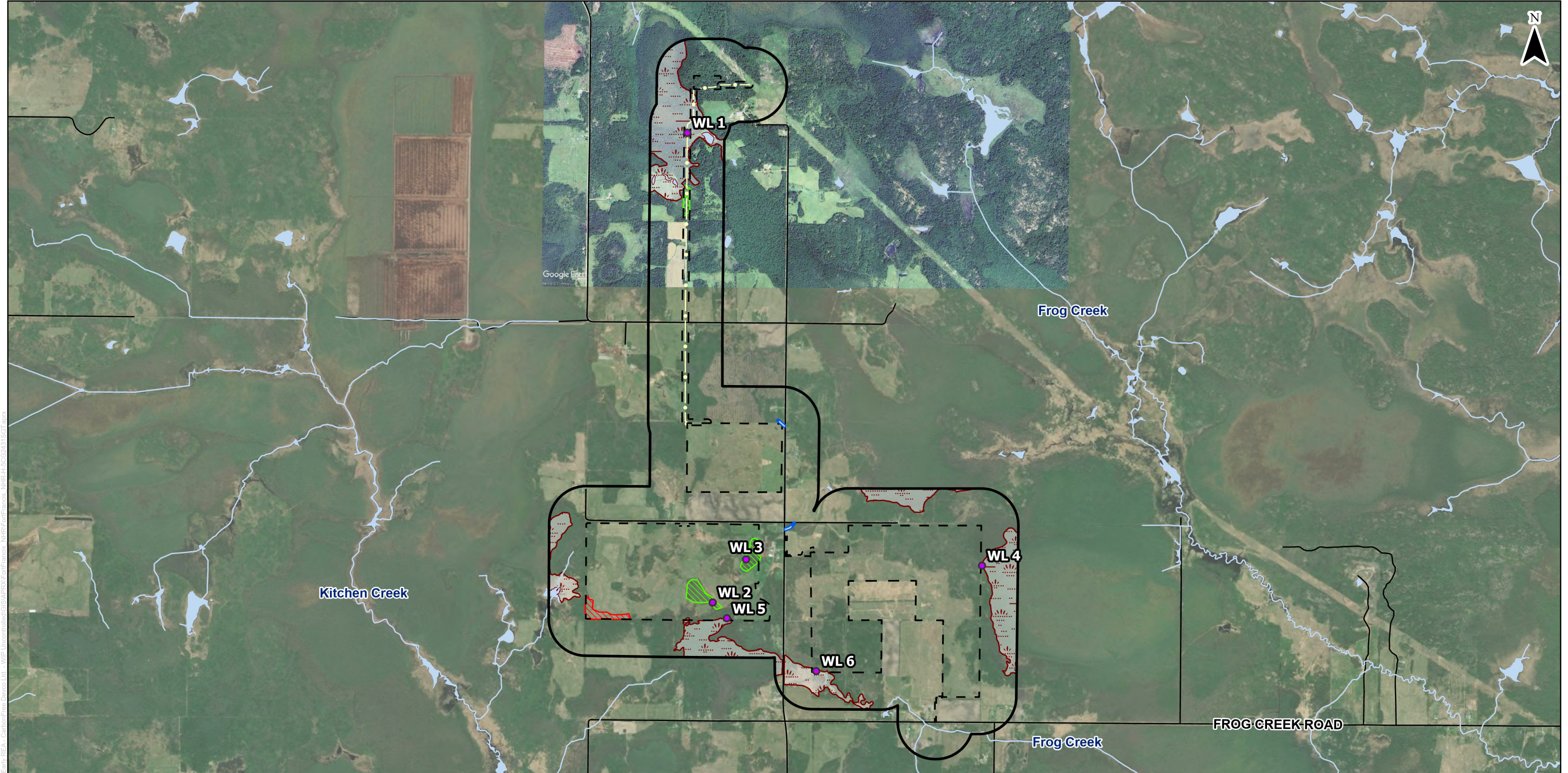
The following sections include the natural features to be assessed as part of the NHA. Confirmation of the Records Review (Section 2) findings and any additional natural features discovered during the Site Investigation are discussed in the following sections.

3.3.7.1 Wetlands

The Records Review identified seven wetlands overlapping with the Project Location. Additional wetlands were added based on observations made during the Site Investigation. One wetland identified during the desktop review as denoted as Wetland 4 in Figure 2-1 was determined to be absent, as agricultural activities were observed occurring throughout the area. Wetlands on site delineated as being under 2 ha were subject to studied to confirm whether significant features were present but are not being carried forward to the EoS based on typically OWES protocols. Two additional wetlands were identified through site investigations. All wetlands present wetlands over 2 ha will be assumed significant for the purposes of this NHA and will be carried forward to an EIS. A summary of wetland results is available within Figure 3-2.

3.3.7.2 Wildlife Habitat

The REA Regulation requires determination on whether any wildlife habitats identified through the NHA are significant. The Records Review identified White-tailed Deer Wintering Yard (Stratum 1) on and within 50 m of the Project Location, as seen in Figure 2-1.



LEGEND

- Wetland
- Proposed Transmission Line
- Road
- Unnamed Watercourse
- Watercourse
- Project Location
- Study Area (300m Buffer)
- Waterbody
- Wetland Not Present
- Additional Identified Wetland
- Unevaluated Wetland (MNR)

NOTES:
1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 17N
3. GoogleEarth 2025 Imagery added for clarity due to cloud cover.

0 500 1,000 2,000
1:30,000 m

PROJECT: CarbonFree Fort Frances Project - Natural Heritage Assessment				
FIGURE TITLE: Site Investigation Confirmed Wetlands				
CLIENT: CarbonFree Fort Frances LTD				
DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 3-2	REV NO.: 1	HATCH
DATE: 13/04/26	PAGE: 1			

The definition of wildlife habitat in the REA Regulation includes an area:

- Where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including:
 - ♦ Where a species concentrates at a vulnerable point in its annual or life cycle; and
 - ♦ Important to a migratory or non-migratory species.

The purpose of the Site Investigation was to confirm the existence of cSWH and verify the existence of any previously confirmed SWH identified in the Records Review.

All wildlife habitats identified in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) and SWH Ecoregion 3W Criterion Schedule (MNR, 2017) were assessed to determine presence/absence and candidate significance in and within 50 m of the Project Location.

The MNR recognizes five main categories of wildlife habitat (seasonal concentration areas of animals, rare vegetation communities, specialized habitat for wildlife, habitats for SoCC, and animal movement corridors), each with several wildlife habitat types. Indicator species, ELC requisite ecosites and habitat criteria were used to assess the presence/absence of cSWH or generalized cSWH. An assessment of each of these habitat categories is provided in the following sections.

3.3.7.2.1 Seasonal Concentration Areas of Animals

The Natural Heritage Reference Manual (NHRM) (MNR, 2010) describes seasonal concentration areas of animals as

- Areas where animals occur in relatively high densities for the species at specific periods in their life cycles and/or in particular seasons; and
- Seasonal concentration areas, which tend to be localized and relatively small in relation to the area of habitat used at other times of the year.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) and SWH Ecoregion 3W Criterion Schedule (MNR, 2017) were used to determine the presence/absence and evaluate the significance of seasonal concentration areas within the Project Location. Deer Wintering Areas has been added to Table 3-8 as it is not reflected in Ecoregion Criterion Schedules but was identified during a review of available desktop information. An assessment of each of the habitat types associated with this category is provided in Table 3-8.

Table 3-8: cSWH Assessment for Seasonal Concentration Areas for Wildlife Species

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Waterfowl Stopover and Staging Areas (Terrestrial)	American Black Duck, Wood Duck, Green-winged Teal, Blue-winged Teal, Mallard, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall	Brant, Cackling Goose, Canada Goose, Snow Goose, Ross's Goose, Tundra Swan, Trumpeter Swan, Wood Duck, Gadwall, American Wigeon, American Black Duck, Mallard, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal <i>Other:</i> Sandhill Crane	Focus on sites that have appropriate vegetation and highest likelihood of seasonal water accumulation. These include: B060-062, B077-079, B093-095, B109-111 Plus, evidence of annual spring flooding from meltwater or run-off within these ecosites.	- Open areas with sheet water during Spring (mid-March to June) or Fall (September to November) - Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. - Flood plains (flooded riverbanks). - Cultivated fields with waste grains are commonly used by waterfowl, these are not considered SWH.	There are active agricultural fields within and adjacent to the Project that may provide waste grains. While there may be areas within and adjacent to the Project with seasonal flooding, these areas are associated with active farmland. No observations of sheet water that could be used as stopover and staging habitat were observed throughout site visits or within satellite imagery for the area.	N	N	N/A	N
Waterfowl Stopover and Staging Areas (Aquatic)	Canada Goose, Cackling Goose, Snow Goose, American Black Duck, Northern Pintail, Northern Shoveler, American Wigeon, Gadwall, Green-winged Teal, Blue-winged Teal, Hooded Merganser, Common Merganser, Lesser Scaup Greater Scaup, Long-tailed Duck, Surf Scoter, White-winged Scoter, Black Scoter, Ring-necked Duck, Common Goldeneye, Bufflehead, Redhead, Ruddy Duck, Red-breasted Merganser, Brant, Canvasback, Tundra Swan, Trumpeter Swan	Brant, Cackling Goose, Canada Goose, Greater White-fronted, Goose, Snow Goose, Ross's Goose, Tundra Swan, Trumpeter Swan, Wood Duck, Gadwall, American Black Duck, American Wigeon, Mallard, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal, Canvasback, Redhead, Ring-necked Duck, Lesser Scaup, Greater Scaup, Harlequin Duck, Surf Scoter, White-winged Scoter, Black Scoter, Long-tailed Duck, Bufflehead, Common Goldeneye, Common Merganser, Hooded Merganser, Red-breasted Merganser, Ruddy Duck <i>Others:</i> Red-necked Grebe, American Coot, Sandhill Crane, Common Loon, Red-throated Loon <u>Special Concern:</u> Horned Grebe	B142-152	- Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and stormwater ponds do not qualify as a SWH; however, a reservoir managed as a large wetland or pond/lake does qualify. - These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). - Sites with Wild Rice have a high likelihood of being a waterbird stopover and staging area.	Wetlands are present in and within 50 m of the Project Location; however, the marsh habitat likely does not support large aggregates of waterfowl due to the size of the features. None of the wetlands in proximity to the Project Location exhibit open water habitat sizable enough to support Waterfowl Stopover and Staging Areas. This habitat type is considered not present.	N	N	N/A	N

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Shorebird Migratory Stopover Area	Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Solitary Sandpiper, Spotted Sandpiper, Semipalmated Sandpiper, Pectoral Sandpiper, White-rumped Sandpiper, Baird's Sandpiper, Least Sandpiper, Stilt Sandpiper, Short-billed Dowitcher, Red-necked Phalarope, Wilson's Phalarope, Whimbrel, Ruddy Turnstone, Sanderling, Dunlin, Wilson's Snipe	Black-bellied Plover, American Golden-Plover, Semipalmated Plover, Killdeer, Whimbrel, Hudsonian Godwit, Marbled Godwit, Ruddy, Turnstone, Stilt Sandpiper, Sanderling, Dunlin, Baird's Sandpiper, Least Sandpiper, White-rumped Sandpiper, Buff-breasted Sandpiper, Pectoral Sandpiper, Semipalmated Sandpiper, Short-billed Dowitcher, Wilson's Snipe, Spotted Sandpiper, Solitary Sandpiper, Greater Yellowlegs, Lesser Yellowlegs, Wilson's Phalarope	B005-006, B160-162, B170-172, B176-178, B186-188, B204, B207, B154-156	- Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. - Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Will likely require multiple site visits. - Storm water retention ponds, cultivated fields, and sewage lagoons are not considered SWH.	There are no beaches, beach bars, sand dunes or meadow marshes in or within 50 m of the Project Location. There are no requisite ecosites found on or within 50 m of the Project Location and no indicator species were confirmed during the time of the Site Investigation. This habitat feature is considered not present.	N	N	N/A	N
Colonially – Nesting Bird Breeding Habitat (Bank and Cliff)	Cliff Swallow	Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies), Cliff Swallow <u>Threatened:</u> Bank Swallow	Cliff faces, bridge abutments, silos, barns (Cliff Swallows). Habitat found but not limited to the following ecosites: B001-004, B157-159, B173-175	- Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. - Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. - Does not include a licensed/permitted Mineral Aggregate Operation.	There were no cliffs or banks observed on or within 50 m of the Project Location that would provide suitable habitat for colonially nesting bird breeding habitat (cliff). This habitat type is considered not present.	N	N	N/A	
Colonially – Nesting Bird Breeding Habitat (Trees/Shrubs)	Great Blue Heron, Bonaparte's Gull, Double-crested Cormorant	Bonaparte's Gull, Black Tern, Double-crested, Cormorant, Great Blue Heron	<u>Swamp</u> – SWM2, SWM3, SWM5, SWM6, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7 <u>Fen</u> – FET1 May include a wide variety of tall treed ecosites. Habitat selection based on close proximity to water body or on island: B011-019, B023-028, B033-043, B045-059, B048-059, B064-076, B081-092, B097-108, B113-137, B161-162, B177-178, B222-224	- Great Blue Herons nest in live or dead standing trees in wetlands, lakeshores, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. - Most nests in trees are 11 to 15 m from ground, near the top of the tree. - Bonaparte's Gulls nest in coniferous trees (preferably spruce-fir) near fens, bogs, swamps, ponds or lakes. - Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen.	Though wetlands are present within the Project Location, no wetlands are of sufficient size to support colonial nesting birds. Therefore, this habitat type is considered not present. No observation of colonial nesting bird activity was noted throughout site investigations.	N	N	N/A	

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Colonially – Nesting Bird Breeding Habitat (Ground)	Herring Gull, Ring-billed Gull, Common Tern, Double-crested Cormorant, Brewer's Blackbird	Ring-billed Gull, Herring Gull, Common Tern, Caspian Tern, Double-crested, Cormorant, Brewer's Blackbird <u>Threatened:</u> American White Pelican	Any rocky island or peninsula (natural or artificial) within a lake or large river. B160-165, B169-172, B176-181, B185-188 Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). B008-009, B020-021, B030-031, B045-046, B061-062, B078-079, B094-095, B110-111, B142-144 <u>Meadow Marsh</u> – MAM1-6 <u>Shallow Marsh</u> – MAS1-3 <u>Cultural Meadow</u> – CUM	- Nesting colonies of gulls and terns are on islands or peninsulas (natural or artificial) associated with open water or in marshy areas, lakes or large rivers - Brewer's Blackbird colonies are found loosely on the ground in or in low bushes near streams and irrigation ditches within farmlands. - Double-crested Cormorants prefer to nest in trees but will nest on the ground as well where trees are limited or have died and fallen.	There is no habitat potential for gulls and terns within the Project Location. This habitat feature is considered not present. Habitat potential exists for Brewer's Blackbird within small select areas of the Project Location, however, low quality and is considered not present.	N	N	N/A	
Bald Eagle and Osprey Nesting	Osprey <u>Special Concern Species:</u> Bald Eagle	Osprey <u>Special Concern:</u> Bald Eagle <u>Endangered:</u> Golden Eagle	Treed communities directly adjacent to riparian areas – rivers, lakes, ponds and wetlands. Important habitat includes forested ecosites within the vicinity of lakes and rivers that receive large runs of salmonids. Undisturbed mature trees or snags disturbed evenly along shorelines are important. Most individual trees used for perching are “super canopy” trees.	Most sites have been used for several years. Mostly associated with large river systems and lake confluences. Can be important hunting locations in Spring, Fall, or Winter. Storm water waste facilities, retention ponds and sewage lagoons are not considered SWH. Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. - Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. - Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).	There are deciduous woodlands adjacent ponds/open water wetlands (Wetland 1) Within and within 50 m of the Project Location. No Eagle or Osprey nests were observed while conducting site investigations. However, as these species are known to occur in the region, this habitat type will be considered generalized cSWH.	Y	Y	Wetland 1	

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Sharp-tailed Grouse Leks	Sharp-tailed Grouse	Sharp-tailed Grouse	B029-031, B044-046, B060-062, B077-079, B093-095, B109-111, B126, B136-141	- Leks are an important habitat feature required to maintain populations of sharp-tailed grouse. - The lek or dancing ground consists of bare, grassy area as the core of the lekking area and may contain some sparse shrubland. - There is often a knoll or slightly elevated rise in topography associated with the site. This is a better drained site less likely to collect water. - Leks are typically a grassy field/meadow separated by >15 ha from adjacent shrublands and >30 ha from adjacent treed areas. - Field/meadows are to be >15 ha when adjacent to shrubland and >30 ha when adjacent to deciduous stands. - Field/meadows are to be as undisturbed as possible with low intensities of agriculture (light grazing or late haying). - Leks will be used annually if not destroyed by cultivation or invasion of woody plants or tree planting.	Incidental observations of multiple Sharp-tailed Grouse were made during the 2025 site investigations. However, given the size and proximity to other woodland and anthropogenic features, it is unlikely to support Lek habitat and is considered not present within the Project Location.	N	N	N/A	
Bat Hibernaculum	Big Brown Bat, Tri-coloured Bat	Big Brown Bat <u>Endangered:</u> Little Brown Myotis, Northern Long-eared Myotis, Eastern Small-footed Myotis, Tricolored Bat	B158-159, B164-165, B174-175, B180-181 Caves and mine shafts are the important features. Commonly associated as components of either Cliff or Rock Barren ecosites.	- Hibernacula may be found in abandoned caves, addits, mine shafts, underground foundations and karsts. - Active mine sites should not be considered as SWH. - The locations of bat hibernacula are relatively poorly known. - Buildings are not considered to be SWH.	There are no crevices or caves on or within 50 m of the Project Location. This habitat feature is considered not present.	N	N	N/A	N
Bat Maternity Colony	Big Brown Bat, Silver-haired Bat	Big Brown Bat, Silver-haired Bat <u>Endangered:</u> Little Brown Myotis, Northern Long-eared Myotis, Eastern Small-footed Myotis, Tricolored Bat	<u>Forest</u> – FOD, FOM <u>Swamp</u> – SWD, SWM Maternity colonies considered SWH are found in treed Ecosites. B011-019, B015-109, B023-028, B033-043, B039-043, B048-059, B054-059, B064-076, B081-092, B097-108, B113-125, B126-133, B222-224 Aspen is an important feature in Ecoregion 3E & 3W, primarily the presence of larger diameter trees in older mixed-wood stands.	- Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). - Maternity roosts are not found in caves and mines in Ontario. - Maternity colonies located in Mature (dominant trees >80 yrs old) deciduous or mixed forest stands with >10 ha large diameter (>25 cm dbh) wildlife trees. - Female bats prefer wildlife trees (snags) in early stages of decay, Class 1 or 2 or Class 2 to 4, can be living or with bark mostly intact. - Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred.	There are woodlands within 50 m of the Project Location. These woodlands are assumed to have potential roosting habitat. As this habitat type is considered generalized, habitat use surveys are not required. Potential negative environmental effects and recommended mitigation measures will be provided for this habitat type in the EIS. Acoustic monitoring was conducted during the month of June to assess presence/absence of potential bat species under the <i>Endangered Species Act</i> guidance.	Y	Y	Bat 1 and 2	Y (generalized cSWH)

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Amphibian Breeding Habitat		Eastern (Red-spotted) Newt, Spotted Salamander, Blue-spotted Salamander, American Toad, Gray Treefrog, Boreal Chorus Frog, Wood Frog, Spring Peeper, Northern Leopard Frog, Green Frog, Mink Frog, Mudpuppy	May include swamps and thickets, vernal/seasonal pooling, riparian and variety of wetland interiors and margins. B019-156 B223-224	Wetlands and pools (including vernal pools) >500m2 (about 25 m diameter) supporting high species diversity are significant; small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. Spotted Salamanders are extremely rare in 3W; candidate wildlife habitat for this species could include artificial wetlands and/or ponds and ditches. Wetlands and pools need to persist until August. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape, and concealment from predators.	Wetlands and vernal pools exist within the Project Location, thus this habitat is considered present.	Y	Y	Y	
Turtle Wintering Areas	Midland Painted Turtle <u>Special Concern:</u> Snapping Turtle	Painted Turtle <u>Special Concern:</u> Snapping Turtle	<u>Marsh</u> – MA <u>Open Fen</u> – FEO <u>Open Bog</u> – BOO Lakes, wetlands, ponds, and ecosites: B128-142 B145-152	- For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates. - Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate dissolved oxygen. - Year-round persistence of standing or flowing water to depth, or presence of springs to prevent freezing is key. - Man-made ponds such as sewage lagoons or stormwater ponds should not be considered SWH. - Both Midland and Western Painted Turtle are present in 3W.	There are wetlands that interact with the Project Location; however, in all cases the features likely freeze to bottom providing limited opportunity for overwintering. No turtles were observed during any site investigations. Based on the minimal potential habitat present and lack of historical or recent observations of turtles within it is believed that turtle wintering habitat is not present within 50 m of the Project Location.	N	N	N/A	N

SEASONAL CONCENTRATION AREAS FOR WILDLIFE SPECIES									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Reptile Hibernacula	Eastern Gartersnake, Smooth Green Snake, Northern Ringneck Snake, Northern Redbelly Snake	Eastern Gartersnake, Northern Redbelly Snake	For all snakes, habitat may be found in any forested ecosite in northern Ontario. Talus, rock barren, crevice and caves are more typically related to these habitats. Many suitable conditions also observed in the very shallow ecosite particularly on fractured bedrock and lower veg cover. Open and Sparse Tall/Low Treed Shrub Systems. B008-028, B167-172, B174, B175, B180-181, B183-188	- For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. - Observation of congregating snakes on sunny warm days in the spring or fall is a good indicator of a hibernaculum. - The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. - Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. - Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover.	There are various woodlands within 50 m of the Project Location that may provide suitable habitat for hibernating snakes. No significant areas of fissured rock were observed on site. No snake observations were made throughout site investigations.	N	N	N/A	N
Deer Winter Congregation Areas	White tailed Deer	N/A	All Forested Ecosites	Woodlots >100 ha in size or if large woodlots are rare in a planning area woodlots >50 ha. Woodlots with high densities of deer due to artificial feeding are not significant.	Woodlots of the size largely absent from the Project Location. Areas mapped previously as Deer Yarding areas have since been cleared and no longer serve as SWH.	N	N	N/A	N

3.3.7.2.2 Rare Vegetation Communities

The NHRM (MNR, 2010) describes rare vegetation communities as:

- Areas that contain a provincially rare vegetation community which depend on such habitats for their survival and cannot readily move to find alternative habitats; and
- Areas that contain a vegetation community that are rare within the planning area.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) and SWH Ecoregion 3W Criterion Schedule (MNR, 2017) was used to determine the presence/absence and evaluate the significance of rare vegetation communities within the project Location. An assessment of each of the rare vegetation communities considered rare within Ecoregion 3E and 3W is provided in Table 3-9.

3.3.7.2.3 Specialized Habitat for Wildlife

The NHRM (MNR, 2010) describes specialized habitats for wildlife as:

- Areas that support wildlife species that have highly specific habitat requirements;
- Areas with high species and community diversity; and
- Areas that provide habitat that greatly enhance species' survival.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) was used to determine the presence/absence and evaluate the significance of specialized wildlife habitat within the Project Location. An assessment of each of the habitat types associated with this category is provided in Table 3-10.

3.3.7.2.4 Habitat for Species of Conservation Concern

A list of SoCC that have been recorded within 1 km of the Project Location is provided in Appendix A. The habitat guides and criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) and SWH Ecoregion 3W Criterion Schedule (MNR, 2017) were used to determine the presence/absence and evaluate the significance of habitat for SoCC recorded within the Project Location. An assessment of each of the habitat guides associated with this category and whether they were identified during the Site Investigation and Targeted Surveys is provided in Table 3-11.

3.3.7.2.5 Animal Movement Corridors

The SWHTG describes animal movement corridors as:

- Habitats that link two or more wildlife habitats that are critical to the maintenance of a population of a particular species or group of species; and
- Habitats with a key ecological function to enable wildlife to move, with minimum mortality, between areas of SWH or core natural areas.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) and SWH Ecoregion 3W Criterion Schedule (MNR, 2017) were used to determine the presence/absence and evaluate the significance of animal movement corridors within the Project Location. An assessment of each of the habitat types associated with this category is provided in Table 3-12.

Table 3-9: cSWH Assessment for Rare Vegetation Communities

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Cliffs and Cliff Rim, including Talus Slopes	N/A	Granitic cliff species: <i>Polypodium virginianum</i>, <i>Deschampsia cespitosa</i>, <i>Umbilicaria</i> sp., <i>Betula papyrifera</i> Basic cliff indicator species: <i>Polypodium virginianum</i>, <i>Woodsia ilvensis</i>, <i>Cystopteris fragilis</i>, <i>Danthonia spicata</i>, <i>Dechampsia flexuosa</i>, <i>Aquilegia canadensis</i>, <i>Campanula gieseckiana</i>, <i>Sibbaldiopsis tridentate</i>, <i>Selaginella rupestris</i>, <i>Cladina rangiferina</i>, <i>Cladina mitis</i>, <i>Vaccinium angustifolium</i>, <i>Arctostaphylos va-ursi</i>, <i>Diervilla lonicera</i>, <i>Betula papyrifera</i> Drier/warmer cliff species: <i>Umbilicaria</i> sp. <i>Artemisia campestris</i>, <i>Campanula gieseckiana</i>, <i>Heuchera richardsonii</i>, <i>Sibbaldiopsis tridentate</i>, <i>Toxicodendron rydbergii</i>, <i>Parthenocissus inserta</i> Cooler/wetter cliff species: <i>Woodsia glabella</i>, <i>Trisetum spicatum</i>, <i>Saxifraga paniculata</i>, <i>Cystopteris laurentiana</i>, <i>Polygonum viviparum</i>, <i>Solidago uliginosa</i>, <i>Cystopteris fragilis</i> Talus Species:	Uncommon to rare in Ecoregion 3E. <u>Cliffs</u>: B157-159, B173-175, B201-203 <u>Talus</u>: B166-168, B182-184	Acidic sites include granitic and sandstones. These sites are nutrient poor, typically with very few plant species. Cliffs: Vertical consolidate bedrock communities with a minimum height of 3 m and a slope of >60° or 173%. They have limited plant growth and species diversification. Ground cover dominated by lichen and bryophytes. Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Diabase cliffs are relatively richer sites that tend to have more diverse plant communities and a larger array of potential rare species. Cliffs that are warmer and drier than normal have a better likelihood of containing plants with more southern or prairie affinities. Cliffs that have cooler and wetter microclimates than normal have a better likelihood of containing Arctic-Alpine disjuncts. Cliff Rim: Exposed bedrock areas on top of face of cliff. Typically narrow, with very shallow soil and lacking trees (may be stunted). Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Talus: Rock accumulations at the base of cliffs, or former cobble beaches left behind after lake levels drop. These have a skeletal soil structure, and can have organic accumulations between the rocks. Lichen cover usually extensive. Trees and shrubs are stunted. Herbs and graminoids limited to patches of organic or mineral soil accumulations. Talus slopes can provide unique and isolated habitat for rare plants and vegetation communities that can be significantly impacted by disturbance such as invasive species and/or trampling or removal of the talus.	There are no cliffs or talus slopes on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>Polypodium virginanum</i> , <i>Agrostis scabra</i> , <i>Aralia hispida</i> , <i>Woodisa ilvensis</i> , <i>Aralia nudicaulis</i> , <i>Cladina rangiferina</i> , <i>Cladina mitis</i> , <i>Diervilla lonicera</i> , <i>Alnus viridis ssp.crispa</i> , <i>Prunus pensylvanica</i> , <i>Betula papyrifera</i> , <i>Populus tremuloides</i>							
Rock Barren	N/A	Rock Barren species: <i>Danthonia spicata</i> , <i>Deschampsia flexuosa</i> , <i>Elymus trachycaulus</i> , <i>Carex pensylvanica</i> , <i>Corydalis sempervirens</i> , <i>Aralis hispida</i> , <i>Agrostis scabra</i> , <i>Aralia nudicaulis</i> , <i>Pteridium aquilinum</i> , <i>Vaccinium angustifolium</i> , <i>Rubus spp.</i> , <i>Diervilla lonicera</i> , <i>Betula papyrifera</i> , <i>Pinus banksiana</i> , <i>Populus tremuloides</i>	<u>Calcareous Rock Barren:</u> B179, B180, B181 <u>Precambrian Rock Barren:</u> B163, B164-165 <u>Basic Rock Barren:</u> B180-181 <u>Acidic Rock Barren:</u> B163-165	Exposed bedrock areas (mostly exposed rock with <5 cm mineral or <10 cm organic material) and <25% vascular vegetation. Rock barrens have limited plant growth and species diversification. Ground cover dominated by lichens and bryophytes. Plant communities are tolerant of environmental extremes, well adapted to desiccation, rapid fluctuations in temperature, and low availability of nutrients. Acidic rock barrens in 3W include granitic and sandstones. These sites are nutrient poor sites with very few plant species. Basic (mainly diabase) rock barrens are relatively richer sites that tend to have more diverse plant communities and a larger array of potential rare species. Exposed bedrock areas (mostly exposed rock with <5cm mineral or <10cm organic material) and <25% vascular vegetation.	There are no rock barrens on or within 50 m of the Project Location.	N	N	N/A	N
Sand Dunes (Including Freshwater Coastal Dunes) Notably: American Dune Grass Type	N/A	Characteristics plant species of sand dunes grasses type in 3W include: <i>Ammophila breviligulata</i> , <i>Artemisia campestris spp. caudata</i> , <i>Elymus trachycaulus</i> , <i>Leymus mollis</i> , <i>Lathyrus japonicus</i> , <i>Xanthium strumariu</i> , <i>Prunus pumila var. pumila</i> , <i>Hudsonia tomentosa</i> Other species may include: <i>Anemone multifida</i> , <i>Arabidopsis lyrata</i> , <i>Arctostaphylos uva-ursi</i> , <i>Campanula gieseckiana</i> , <i>Cornus stolonifera</i> , <i>Elymus canadensis</i> , <i>Equisetum hyemale</i> , <i>Festuca</i>	Rare and limited within 3W. B005-B008, B006, B020, B030, B142, B155	Exposed mineral material community often associated with shorelines of lakes or exposed inland mineral material that has been shaped by eolian (wind) processes. Open grassy sand dunes with Indicator Species: American dune grass, beach pea, and sand cherry. Scattered white spruce forest islands may also occur.	There are no sand dunes on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>saximontana</i> , <i>Juniperus communis</i> , <i>Anthoxanthum hirtum</i> , <i>Maianthemum stellatum</i> , <i>Pinus resinosa</i> , <i>Pinus strobus</i> , <i>Polygonella articulata</i> , <i>Pteridium aquilinum</i> , <i>Salix interior</i> , <i>Salix myricoides</i> , <i>Trisetum melicoides</i> <u>Threatened:</u> Pitcher’s Thistle							
Rare Arctic-Alpine Shoreline Plant Communities (Including Great Lakes)	N/A	Arctic Alpine Species: <i>Allium schoenoprasum</i> var. <i>sibiricum</i> , <i>Anemone parviflora</i> , <i>Antennaria rosea</i> , <i>Arenaria humifusa</i> , <i>Arnica cordifolia</i> , <i>Astragalus alpinus</i> , <i>Bistorta vivipara</i> , <i>Calamagrostis purpurascens</i> , <i>Calamagrostis stricta</i> ssp. <i>inexpansa</i> , <i>Carex atratiformis</i> , <i>Carex glacialis</i> , <i>Carex scirpoidea</i> , <i>Carex supina</i> , <i>Castilleja septentrionalis</i> , <i>Cerastium alpinum</i> , <i>Chamerion latifolium</i> , <i>Chrysosplenium tetrandrum</i> , <i>Cypripedium passerinum</i> , <i>Cystopteris montana</i> , <i>Draba aurea</i> , <i>Draba cana</i> , <i>Draba cinerea</i> , <i>Dryas drummondii</i> , <i>Dryas integrifolia</i> , <i>Empetrum nigrum</i> , <i>Epilobium hornemannii</i> , <i>Erigeron acris</i> , <i>Erigeron hyssopifolius</i> , <i>Erigeron lonchophyllus</i> , <i>Eriophorum brachyantherum</i> , <i>Eriophorum russeolum</i> , <i>Euphrasia hudsoniana</i> , <i>Euphrasia nemorosa</i> , <i>Euphrasia wettsteinii</i> , <i>Hedysarum alpinum</i> , <i>Huperzia appressa</i> , <i>Huperzia selago</i> , <i>Luzula parviflora</i> , <i>Moehringia</i>	B161, B162 (can include other ecosites)	Primarily found on the shoreline of Lake Superior on open basic bedrock. Vegetation consists mostly of arctic-alpine species. Inland can be found on rocky shorelines of rivers and streams, cliff tops, canyons, and peatlands. These relict populations are rare and declining and thought to have persisted in suitable habitats following the retreat of the glaciers approximately 11,000 years ago. These open environments are maintained in part by the energy associated with river systems, which create a dynamic shoreline environment, particularly in areas where combinations of hydrology, topography and stream gradient are responsible for periodic flooding and associated flood-scour.	There are no arctic-alpine shoreline habitats on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>macrophylla</i> , <i>Neottia borealis</i> , <i>Oxytropis borealis</i> , <i>Oxytropis splendens</i> , <i>Packera indecora</i> , <i>Packera pauciflora</i> , <i>Pinguicula vulgaris</i> , <i>Poa alpina</i> , <i>Poa glauca</i> , <i>Poa pratensis</i> ssp. <i>alpigena</i> , <i>Potentilla bimundorum</i> , <i>Pyrola grandiflora</i> , <i>Sagina nodosa</i> , <i>Salix myrtilifolia</i> , <i>Salix planifolia</i> , <i>Salix pseudomonticola</i> , <i>Salix pseudomyrsinites</i> , <i>Saxifraga oppositifolia</i> , <i>Saxifraga paniculata</i> , <i>Saxifraga tricuspidata</i> , <i>Selaginella selaginoides</i> , <i>Silene acaulis</i> , <i>Solidago multiradiata</i> , <i>Taraxacum ceratophorum</i> , <i>Tofieldia pusilla</i> , <i>Trichophorum cespitosum</i> , <i>Trisetum spicatum</i> , <i>Vaccinium caespitosum</i> , <i>Vaccinium uliginosum</i> , <i>Viola epipsila</i> , <i>Woodsia alpina</i> , <i>Woodsia glabella</i>							
Diverse and Sensitive Orchid Communities	N/A	Orchid indicator species include: <i>Calopogon tuberosus</i>, <i>Cypripedium arietinum</i>, <i>Cypripedium passerinum</i>, <i>Cypripedium reginae</i>, <i>Goodyera oblongifolia</i>, <i>Malaxi monophyllos</i>, <i>Malaxis paludosa</i>, <i>Neottia auriculata</i>, <i>Neottia borealis</i>, <i>Neottia Convallarioides</i>, <i>Platanthera hookeri</i>, <i>Platanthera lacera</i>. Other characteristic orchid species of diverse communities may include: <i>Arethusa bulbosa</i>, <i>Calypso bulbosa</i>, <i>Corallorhiza maculate</i>,	Will include a wide variety of ecosites. Diverse orchid communities are likely to be found in: B126-139, B222-224	Fungi provide orchids with a carbon source. By consuming the fungi, orchids are able to produce seed via photosynthesis or fungi consumption. In addition to their fungal relationships, many of the indicator and sensitive species or orchids in 3W are associated with hydric sites and are extremely sensitive to water level fluctuations. Horticultural or planted sites are not considered SWH.	Orchid species or their habitats were not identified on or within 50 m of the Project Location.	N	N	N/A	

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<i>Corallorhiza striata</i> , <i>Corallorhiza trifida</i> , <i>Cypripedium acaule</i> , <i>Cypripedium parviflorum</i> var. <i>pubescens</i> , <i>Dactylorhiza viridis</i> , <i>Galearis rotundifolia</i> , <i>Goodyera repens</i> , <i>Goodyera tessellata</i> , <i>Liparis loeselii</i> , <i>Malaxis unifolia</i> , <i>Neottia cordata</i> , <i>Platanthera aquilonis</i> , <i>Platanthera clavellata</i> , <i>Platanthera dilatata</i> , <i>Platanthera huronensis</i> , <i>Platanthera obtusata</i> , <i>Platanthera orbiculata</i> , <i>Platanthera psycodes</i> , <i>Pogonia ophioglossoides</i> , <i>Spiranthes lacera</i> , <i>Spiranthes romanzoffiana</i>							
Hardwood Swamps	N/A	N/A	B130, B131, B132, B133	Dominant hardwood canopy that is located within lower topographic positions and subject to flooding. Nutrient regime is rich and substrate is mostly moderately deep to deep with variable textures. All hardwood swamp ecosites are considered significant.	There are no hardwood swamps on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Red and White Pine Stands	N/A	N/A	B011, B015, B023, B027, B033, B039, B048, B054, B064, B069, B081, B087, B097, B103, B113, B118	Red and White Pine stands attain their northern limit near the northern margin of the Clay Belt and within 3W. They occur as sporadic, small stands and are generally found on dry, often exposed, south-facing slopes, and rocky sites. However, these conditions can vary. Uncommon to rare in Ecoregion 3W – they amount to less than 1% of the total forest.	There are no Red or White Pine stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Black Ash	Black Ash	Black Ash	B019, B028, B056, B059, B071, B076, B089, B092, B105, B108, B120, B125	Black Ash stands are found within low lying, predominantly alluvial material throughout the Clay Belt.	Black Ash documented within small wetland within the Project Location. However, does not meet absolute (>10%) cover or relative cover (>35%) to be considered SWH.	Y	N	N/A	N
Rare Treed Type: Elm	Elm Spp.	Elm Spp.	B019, B043, B056, B059, B071, B076, B089, B092, B105, B108, B120, B125	Elm stands are found within low lying, predominantly alluvial material throughout the Clay Belt. Rare in Ecoregion 3W – they amount to less than 1% of the total forest.	There are no Elm stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Oak	Oak Spp.	N/A	B017, B019, B028, B041, B043, B057, B059, B072, B076, B090, B092, B106, B108, B121, B125	Hardwood canopy within lower topographic positions. Fresh to moist moisture regimes with variable substrate textures.	There are no Oak stands on or within 50 m of the Project Location.	N	N	N/A	N

Rare Vegetation Communities									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Rare Treed Type: Red and Sugar Maple	Red and Sugar Maple	Red and Sugar Maple	B018, B019, B028, B042, B043, B058, B059, B073(Mh), B074(Mr), B075, B076, B091, B092, B107, B108, B122(Mh), B123(Mr), B124, B125	Hardwood canopy containing red and/or sugar maple. Generally, on warmer-than-normal sites with a higher nutrient regime. Rare in Ecoregion 3W – they amount to less than 1% of the total forest.	No Red or Sugar maple stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Mountain Ash (Lake Superior Coastline)	N/A	Mountain Ash	Will include a variety of ecosites.	Old-growth stands of Mountain Ash on the coast of Lake Superior.	No Mountain Ash stands on or within 50 m of the Project Location. Project is not located along the Lake Superior Coastline.	N	N	N/A	
Rare Treed Type: Yellow Birch	Yellow Birch	N/A	B019, B028, B040, B043, B055, B059, B070, B076, B088, B092, B104, B108, B119, B125	Hardwood canopy consisting mostly of yellow birch. Generally, on warmer-than-normal sites with a higher nutrient regime.	No Yellow Birch stands on or within 50 m of the Project Location.	N	N	N/A	N
Other Rare Vegetation Communities (Provincially and Regional)	N/A	N/A	<u>S1 – Extremely rare</u> – usually 5 or fewer occurrences in the province, or very few remaining hectares. <u>S2 – Very rare</u> – usually between 5 and 20 occurrences in the province, or few remaining hectares. <u>S3 – Rare to uncommon</u> – usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining. At the time of publication, rare (S1-S3, SH) plant communities in 3W include: American Dune Grass – Beach Pea – Sand Cherry Dune Grassland Type (S2), Basic Open Cliff Type (S3S4), Boreal Acidic Sandstone Open Cliff Type (S2), Great Lakes Arctic-Alpine Basic Open Bedrock Shoreline Type (S3), Open Sandstone Cliff Type (S1).	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M. The MNR/NHIC will have up to date listing for rare vegetation communities.	All vegetation communities on and within 50 m of the Project Location are common to the area. There are no rare vegetation communities on or within 50 m of the Project Location.	N	N	N/A	N

Table 3-10: cSWH Assessment for Specialized Habitats for Wildlife

Specialized Habitats for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Waterfowl Nesting Area	American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, Common Merganser, Red-breasted Merganser, Mallard, Canada Goose, American Wigeon, Bufflehead, Common Goldeneye	Trumpeter Swan, Wood Duck, Gadwall, American Wigeon, American Black Duck, Blue-winged Teal, Northern Shoveler, Northern Pintail, Green-winged Teal Ring-necked Duck, Bufflehead, Common Goldeneye, Hooded Merganser, Red-breasted Merganser, Common Merganser	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH. B129-135, B140-152, B224 <u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Shallow Water</u> – SAS1, SAM1, SAF1 <u>Meadow Marsh</u> – MAM1, MAM2, MAM3, MAM4, MAM5, MAM6 Note: includes adjacency to Provincially Significant Wetlands.	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5 ha) and any small wetlands (0.5 ha) within 120 m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. - Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests. - Wood Ducks, Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (>40 cm dbh) in woodlands for cavity nest sites.	There are wetlands in and within 50 m of the Project Location. However, due to the size and characteristics of each wetland, this habitat type is considered not present.	N	N	N/A	N
Wild Rice Stand	N/A	<i>Zizania palustris</i> (Wild Rice)	B142-145, B148-152	Ponds, marshes, lakes, bays, coastal inlets, and watercourses with wild rice. These habitats have an abundant food supply for waterbirds. Sites with wild rice have a high likelihood of being a waterfowl stopover and staging area.	Wild rice and potential habitat is not present on or within 50 m of the Project Location, therefore this habitat is considered not present.	N	N	N/A	
Woodland Raptor Nesting Habitat	Red-tailed Hawk, Great-horned Owl, Broad-winged Hawk, Sharp-shinned Hawk, Merlin, Coopers Hawk, Northern Goshawk, Great Gray Owl, Long-eared Owl, Common Raven Cavity Nesters/users: Saw-whet Owl, Boreal Owl, Barred Owl, Northern Hawk Owl, American Kestrel (Northern Flying Squirrel use cavities as roosting sites in winter)	Stick nesters/users: Sharp-shinned Hawk , Cooper's Hawk, Northern Goshawk, Broad-winged Hawk, Red-tailed Hawk, Great Horned Owl, Barred Owl, Great Gray Owl, Long-eared Owl, Merlin, Common Raven Cavity Nesters/users: Great Horned Owl, Boreal Owl, Barred Owl, Northern Hawk Owl, Northern Saw-whet Owl, American Kestrel (Note: Bufflehead, Common Goldeneye, Wood Duck, Common Merganser and Hooded Merganser also use tree cavities for nesting. Northern Flying Squirrels use cavities as roosting sites in winter)	May be found in all forested ELC Ecosites. May also be found in: <u>Swamp</u> – SWD, SWC (directly adjacent to riparian areas – rivers, lakes, ponds and wetlands)	All natural or conifer plantation woodland/forest stands. - Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Merlin or Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. - Some woodland raptors rely on cavity trees for nesting. They do not excavate their own cavities, they rely on natural cavities of sufficient size and those excavated by Pileated Woodpeckers. Larger diameter trees are used most frequently, with nest cavities most often found in trembling aspen. - Nest sites may be used again, or a new nest may be in close proximity to an old nest.	There are deciduous woodlands in and within 50 m of the Project Location. The woodlands do not meet the size or composition typically associated with the habitat. Little interior forest habitat present. This habitat type is considered to be not present.	N	N	N/A	N

Specialized Habitats for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Turtle Nesting Areas	Midland Painted Turtle <u>Special Concern Species:</u> Snapping Turtle	Painted Turtle (Western and Midland) <u>Special Concern Species:</u> Snapping Turtle <u>Threatened:</u> Blanding's Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100 m). <u>Shallow Marsh</u> – MAS1, MAS2, MAS3 <u>Shallow Water</u> – SAS1, SAM1, SAF1 <u>Open Bog</u> – BOO1 <u>Open Fen</u> – FEO1 B003, B006-007, B031, B171-172, B187-188	- Best nesting habitat for turtles is close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. - For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. - Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. - These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	There are wetlands within 50 m of the Project Location. However, due to lack of open water and suitable substrates such as sand and gravel beaches and open areas, this habitat type is considered not present.	N	N	N/A	N
Seeps and Springs	Selected wildlife species that utilize this feature: Ruffed Grouse, Moose, White-tailed Deer, Black Bear, Northern two-lined Salamander	Selected wildlife species that utilize this feature: Ruffed Grouse, Spruce Grouse, Moose, White-tailed Deer, Black Bear, Blue-spotted Salamander, Spotted Salamander <u>Threatened:</u> Forest-dwelling Woodland Caribou	Seeps/Springs are areas where groundwater comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs or groundwater recharge areas.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	There are no known seeps or springs within 50 m of the Project Location. No seeps or springs were documented during the Site Investigations. This habitat type is considered not present.	N	N	N/A	N
Aquatic Feeding Habitat	Moose	Moose	Habitat may be found in all forested ecosites adjacent to water.	- Aquatic feeding habitats are an extremely important habitat component for moose and other wildlife as they supply important nutrients. Forest cover adjacent to these areas is important as well to provide for summer thermal cover, screening and escape cover. - MNR maps these locations on Crown Land and rate the site on a scale of 1 to 4, with 4 having the greatest potential. Feeding sites classed 3 or 4 are candidate SWH.	Rivers and open water features are generally absent from the Project Location. Coniferous forested habitats and large open wetlands are absent from in or within 50 m of the Project Location. Therefore, this habitat type is considered not present.	N	N	N/A	N

Specialized Habitats for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
				- MNR District should be contacted where Class 2 feeding sites are identified as these may be considered significant by MNR if higher quality sites are absent in the surrounding landscape. - Wetlands and isolated embayments in rivers or lakes which provide an abundance of submerged aquatic vegetation such as pondweeds, water milfoil and yellow water lily are preferred sites. Adjacent stands of lowland conifer or mixed woods will provide cover and shade.					
Mineral Licks	Moose, Porcupine	Moose, White-tailed Deer, Porcupine (other species may utilize these sites as well) <u>Threatened:</u> Woodland Caribou	Habitat may be found in all treed ecosites. Most probable in clay ecosites: B110-B125	- Mineral licks are a valuable habitat component but are also very rare on the landscape. - This habitat component is found in upwelling groundwater and the soil around these seepage areas. It typically occurs in areas of sedimentary and volcanic bedrock. In areas of granitic bedrock, the site is usually overlain with calcareous glacial till. - Does not include anthropogenic sources such as roadsides.	Seeps or spring were not documented within the site and the surrounding area is considered disturbed in conjunction with minimal forest cover. Therefore, this feature is considered not present.	N	N	N/A	N
Denning Sites for Mink, Otter, Gray Wolf, Eastern Wolf, Canada Lynx, Marten, Fisher, Black Bear	Mink, Otter, Gray Wolf, Canada Lynx <u>Special Concern:</u> Eastern Wolf <u>Cavity Users:</u> Marten, Fisher	Mink, Otter, Gray Wolf, Coyote, Canada Lynx, Bobcat, Black Bear, Red Fox Cavity Users: Marten, Fisher <u>Threatened:</u> Algonquin Wolf, Cougar, Gray Fox, and Wolverine	Habitat may be found in all treed ecosites.	- Mink prefer shorelines dominated by coniferous or mixed forests with dens usually underground. Mink will often use old muskrat lodges. They may den in root masses along shorelines of waterbodies. - Otters prefer undisturbed shorelines along water bodies that support productive fish populations with abundant shrubby vegetation and downed woody debris for denning. They often use old beaver lodges or log jams and crevices in rock piles. - Marten and fisher share the same general habitat, requiring large tracts of coniferous or mixed forests of mature or older age classes. Denning sites are often in cavities in large trees or under large, downed woody debris.	Shorelines and large tracts of forests were not documented or observed within or 50 m outside of the Project Location. Therefore, this feature is considered not present.	N	N	N/A	N

Specialized Habitats for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
				- Wolves prefer a more interior forest condition for locating their den sites. Wolves often select sandy sites, sloped for excavation (esker areas should be examined as potentially key sites). Wolf dens are often located in close proximity to wetlands. - Lynx dens are most often associated with the presence of downed woody debris. - Black bears, particularly sub-adults, will often den in the base of hollow trees. In 3E, such trees are rare and primarily consist of large diameter cedar or sometimes large white spruce.					
Rendezvous Sites	Gray Wolf <u>Special Concern:</u> Eastern Wolf	N/A	Isolated open areas including bogs, fens, other wetlands, meadows, clearcuts.	- Rendezvous sites may be found in a variety of habitats such as open bogs, burns, clearcuts, beaver meadows, and open forest. - Rendezvous sites are often used by wolf packs during multiple years. - Aras used as rendezvous sites 1 year may be used as den sites in subsequent years. - Wolves appear to have a low tolerance for human activity near rendezvous sites.	Rendezvous sites were not observed or documented within the site or the surrounding area as it is considered disturbed with active land management, cattle, farming activities in conjunction with minimal forest cover for this species to travel between sites. Therefore, this feature is not considered present.	N	N	N/A	N
Amphibian Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Spring Peeper, Wood Frog, American Toad	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Spring Peeper, Wood Frog, American Toad, Gray Treefrog, Boreal Chorus Frog, Green Frog Mink Frog, Mudpuppy	All treed upland ecosites, however more likely on fine textured moist ecosites (e.g., B119-125). The wetland breeding ponds (including vernal pools) may be permanent or seasonal, large or small in size and could be located within or adjacent to the woodland. <u>Forest</u> – FOC, FOM FOD <u>Swamp</u> – SWC SWM SWD	- Presence of a wetland, lake or pond (including vernal pools) >500 m² (about 25 m dia.) within or adjacent (within 120 m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. - Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. - Breeding pools within the woodland or the shortest distance from the forest habitat are more significant because of reduced risk to migrating amphibians and more likely to be used.	This habitat type was identified as potentially present during the Site Investigation These features were subject to further targeted surveys and will be evaluated as part of the EoS.	Y	Y	Moist, Fine: Mixedwood (B125Tt)	Y (generalized cSWH)

Specialized Habitats for Wildlife									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Amphibian Breeding Habitat (Wetlands)	Eastern Newt, American Toad, Spotted Salamander, Four-toed Salamander, Blue-spotted Salamander, Gray Treefrog, Boreal Chorus Frog, Northern Leopard Frog, Green Frog, Mink Frog, Wood Frog, Spring Peeper	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Spring Peeper, Wood Frog, American Toad, Gray Treefrog, Boreal Chorus Frog, Green Frog, Mink Frog, Mudpuppy	Rich swamps and thickets, vernal/seasonal pooling, riparian and variety of wetland interiors and margins B128-135, B141-152, B223-224 Typically, these wetland ecosites will be isolated (>120 m) from woodland ecosites; however, larger wetlands containing predominantly aquatic species (e.g., Green Frog) may be adjacent to woodlands. <u>Swamp</u> – SW <u>Marsh</u> – MA <u>Fen</u> – FE <u>Bog</u> – BO <u>Open Water</u> – OA <u>Shallow Water</u> – SA	- Wetlands and pools (including vernal pools) >500 m (about 25 m diameter) supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats - Wetlands and pools need to persist until mid-July - Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators.	This habitat type was identified as potentially present during the Site Investigation. These features were subject to further targeted surveys and will be evaluated as part of the EoS.	Y	Y	Wetlands	Y (generalized cSWH)
Mast Producing Areas	Black Bear, White-tailed Deer, Ruffed Grouse	N/A	All shrub and treed ecosites capable of producing mast.	- Mast is a very important food requirement for many wildlife species. - Significant tree species include mountain ash and pin cherry. Significant shrub species include blueberries, raspberries, beaked hazel, and choke cherry. - Some Oak or other hard-mast producing species may be present in 3E and significance should be evaluated as encountered because of its importance as a food source for various wildlife species. - Recently disturbed sites (fire or logging), large bedrock outcroppings, forest openings or utility corridors >1 ha provide excellent sites for mast producing shrubs. - Permanent open sites providing long-term food sources are more significant.	Minimal target species were identified and do not meet the 50% ground cover requirement. Therefore, this feature is considered not present.	N	N	N/A	N

Table 3-11: cSWH Assessment for Habitat for Species of Conservation Concern

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Marsh Breeding Bird Habitat	American Bittern, Sora, Red-necked Grebe, Ring-necked Duck, Lesser Scaup, Ruddy Duck, American Coot, Sandhill Crane, Virginia Rail, Trumpeter Swan <u>Special Concern:</u> Black Tern, Yellow Rail	Trumpeter Swan, Ring-necked Duck, Green-winged Teal, Northern Shoveler, Pied-billed Grebe, Red-necked Grebe, Virginia Rail, Sora, American Coot, Sandhill Crane, Common Loon, American Bittern, Spotted Sandpiper, Sedge Wren, Marsh Wren <u>Special Concern:</u> Black Tern, Yellow Rail	B134-152	- Nesting occurs in wetlands. - All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. - Rich wetlands for these bird species are very productive and rare in Northern Ontario landscapes. - Storm water retention ponds and sewage lagoons are not considered SWH.	There are various wetlands in or within 50 m of the Project Location however, only Wetland 1 appears to be of sufficient size and with characteristics to potentially support Marsh Breeding Bird Habitat. In addition, Sedge Wren were recorded during 2025 field studies within the Project Location.	Y	Y	Wetland 1	Y (generalized cSWH)
Open Country Bird Breeding Habitat	Vesper Sparrow, Le Conte's Sparrow, Northern Harrier, Savannah Sparrow <u>Special Concern:</u> Short-eared Owl	Upland Sandpiper, Black-billed Magpie, Western Meadowlark, Eastern Bluebird, Vesper Sparrow, Le Conte's Sparrow.	All Field, Meadow and Sparse Shrub ecosites: B08-09, B020-021, B029-31, B044-046, B060-062, B077-079, B093-095,	- Large field/meadow areas (includes natural and cultural fields and meadows) >30 ha. - Field/meadow not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e., no row cropping or intensive hay or livestock pasturing in the last 5 years). - Field/meadow sites considered significant should have a history of longevity,	Meadow communities confirmed breeding presence of Savannah Sparrows only. As per 3W indicator species, Bobolink and Western Meadowlark were identified within the Project Location. However, soil and zoning class indicate these fields and meadows are designated as Classes 1 and 2, which does	N	N	N/A	N

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
		<u>Special Concern:</u> Short-eared Owl <u>Threatened:</u> Bobolink, Eastern Meadowlark	B109-111, B136-141	either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The indicator bird species are area sensitive requiring larger field/meadow areas than the common grassland species.	not meet the criteria to be considered SWH. Thus, this habitat type is considered not present. The majority of Project areas are associated with existing agricultural activities, however, provide nesting habitat during the active season for Bobolink.				
Shrub/Early Successional Bird Breeding Habitat	Clay-coloured Sparrow, Field Sparrow, Ruffed Grouse, Eastern Kingbird, American Woodcock	N/A	All sparse shrub and shrub ecosites: B09-010, B021-022, B031-032, B046-047, B062-063, B079-080, B095-096, B111-112, B134-135	This wildlife habitat is declining throughout Ontario and North America. - Large natural field areas succeeding to shrub and thicket habitats >30 ha in size. Shrub land or early successional fields, not Class 1 or 2 agricultural lands, not being actively used for farming (i.e., no row-cropping, hay or live-stock pasturing in the last 5 years). - Larger shrub thicket habitats (>30 ha) are most likely to support and sustain a diversity of these species. - Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands.	While thicket communities exist within the Project Location, these communities do not meet the size requirements to be considered SWH and are associated with active agricultural lands. Three species were identified incidentally and during site investigations, including Eastern Kingbird, American Woodcock and Ruffed Grouse. Therefore, this habitat type is considered not present.	N	N	N/A	N

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Special Concern and Rare Wildlife Species All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre (NHIC).	Barn Swallow (<i>Hirundo rustica</i>)	All Special Concern under Ontario's SCA, 2025, Schedule 1 of SAR act and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted study. The Project Location has generally been setback over 50 m from anthropogenic structures that could support Barn Swallow nesting. General mitigation measures such as timing of construction will be incorporated into the EIS.	N	N	SoCC-2	Y (carried forward to EIS)
	Black-Billed Magpie (<i>Pica hudsonia</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies however no breeding evidence was exhibited. Generally, habitat that could support the species does exist within and within 50 m of the Project Location.	Y	Y	SoCC-3	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Bobolink (<i>Dolichonyx oryzivorus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies in discrete areas throughout the site. Where possible, the Project Location has been selected to retain grassland bird habitat not currently utilized for agriculture. Mitigation measures	Y	Y	SoCC-4	Y (carried forward to EIS)
	Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies. Brewer's Blackbird are relatively common in agricultural or cleared areas in northern Ontario. Although presence is likely and observed, the habitat is not limited in this area of northern Ontario. General mitigation measures are prescribed in the EIS.	Y	Y	SoCC-5	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Canada Warbler (<i>Cardellina canadensis</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Canada Warbler is a habitat generalist preferring mixed and wet forests. Generally habitat exists within and within 50 m of the Project Location that could support Canada Warbler, however none were recorded during targeted studies. General mitigation measures have been provided in the EIS.	N	N	SoCC-06	Y (carried forward to EIS)
	Dickcissel (<i>Spiza americana</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. This species general breeding range does not extend into northwestern Ontario and is unlikely to be present. General mitigation measures have been provided in the EIS.	N	N	SoCC-07	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Eastern Whip-Poor-Will (<i>Antrostomus vociferus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Eastern Whip-Poor-Will generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	N	N	SoCC-08	Y (carried forward to EIS)
	Eastern Wood-pewee (<i>Contopus virens</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies. Eastern Wood Pewee prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	Y	Y	SoCC-09	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Golden-Winged Warbler (<i>Vermivora chrysoptera</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. This species is known to nest in young dense shrubs and mature forest and is considered a habitat generalist. This habitat is widely prevalent within the areas surrounding the Project Location	N	N	SoCC-10	Y (carried forward to EIS)
	Olive-sided Flycatcher (<i>Contopus cooperi</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during study. Olive Sided Flycatcher prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	N	N	SoCC-11	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	a single observation of a Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) was incidentally observed greater than 50 m away from the Project Location. Mitigation measures surrounding the protection of potential Woodpecker nesting activities will be incorporated into the EIS.	N	N	SoCC-12	Y (carried forward to EIS)
	Western Meadowlark (<i>Sturnella neglecta</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies in discrete areas throughout the site. Where possible, the Project Location has been selected to retain grassland bird habitat not currently utilized for agriculture. Mitigation measures have been incorporated into the EIS.	Y	Y	SoCC-13	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Wilson's Phalarope (<i>Phalaropus tricolor</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Very little or no habitat exists in proximity to the Project Location for shorebird species.	N	N	SoCC-14	Y (carried forward to EIS)
	Wood Thrush (<i>Hylocichla mustelina</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during targeted studies. Large mature forests have largely been avoided in selection of the Project Location. General mitigation measures to protect the species have been incorporated into the EIS.	Y	Y	SoCC-15	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Monarch (<i>Danaus plexippus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Considered as having potential to occur within the project area in all open to semi open habitats. General mitigation measures incorporated into the EIS.	N	N	SoCC-16	Y (carried forward to EIS)
	Snapping Turtle (<i>Chelydra serpentina</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during targeted studies. Some potential exists for habitat within wetlands. General mitigation measures have been incorporated into the EIS.	N	N	SoCC-17	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	American Badger (<i>Taxidea taxus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	No American Badger or signs of American Badger were observed during study.	N	N	SoCC-18	Y (carried forward to EIS)
	Eastern Red Bat (<i>Lasiurus borealis</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Y	Y	SoCC-19	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Franklin's Ground Squirrel (<i>Spermophilus franklinii</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Not observed during study. Considered as having potential to occur within the project area within suitable grasslands.	N	N	SoCC-20	Y (carried forward to EIS)
	Little Brown Myotis (<i>Myotis lucifugus</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Y	Y	SoCC-21	Y (carried forward to EIS)

Habitat For Species of Conservation Concern									
cSWH Type	Candidate Significant Wildlife Habitat Criteria				Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species 3E	Indicator Species 3W	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
	Silver-Haired Bat (<i>Lasionycteris noctivagans</i>)	All Special Concern under Ontario's SCA, 2025 and Rare (S1-S3, SH) plant and animal species.	All plant and animal element occurrences (EO) within a 1 or 10 km grid. Older EO were recorded prior to GPS being available; therefore, location information may lack accuracy.	When an EO is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species, linking candidate habitat on the site needs to be completed to ELC Ecosites.	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Y	Y	SoCC-22	Y (carried forward to EIS)

Table 3-12: cSWH Assessment for Animal Movement Corridors

Animal Movement Corridors								
cSWH Type	Candidate Significant Wildlife Habitat Criteria			Assessment of cSWH				Carried Forward to EoS (Y/N)
	Indicator Species	ELC Ecosite Codes	Habitat Criteria	Assessment Details	In Project Location (Y/N)	Within 50 m of Project Location (Y/N)	cSWH Feature ID	
Amphibian Movement Corridors	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Wood Frog, Boreal Chorus Frog, Spring Peepers, Northern Leopard Frog, Green Frog, Mink Frog, American Toad, Four-toed Salamander	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.2.2 of the SWH Criteria Schedules for Ecoregion 3E (MNR, 2015) and Ecoregion 3W (MNR, 2017).	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (MNR, 2015).	Amphibian breeding habitat (woodland) was identified for woodlands within the Project Location. Movement between these woodlands would require travelling through active farmland or areas where predation is considered high (i.e., agricultural lands and open areas). Only areas where movement would occur in naturalized areas with adequate cover and protection from predation or incidental take were considered. As such, this habitat type will be considered not present.	N	N	N/A	N
Cervid Movement Corridors	Moose	Corridors may be found in all treed ecosites.	- Movement corridors must be determined when Moose Aquatic Feeding Area and Mineral Lick Habitat are confirmed from Table 1.2.2 (MNR, 2015). - Corridors typically follow riparian areas, woodlots, and areas of physical geography (ravines or ridges). Corridors will be multi-functional (i.e., these will function for any smaller mammal species as well).	‘Moose Aquatic Feeding Area’ and ‘Mineral Lick Habitat’ are not present in or within 50 m of the Project Location, resulting in the absence of movement corridors for Moose. Therefore, this feature is considered not present.	N	N	N/A	N
Furbearer Movement Corridors	Mink, Marten, Fisher, Otter, Canada Lynx	All treed Ecosites adjacent to or within shoreline habitats.	- Intact forest corridors are critical for movements within territories for hunting, breeding, and maintenance of populations. For habitat related to denning sites, a corridor to and from the denning site must be maintained as this habitat is extremely important for local populations and is rarely identified. - Mink and Otter den sites are typically found within a riparian area of a lake, river, or stream or wetland. The den site will potentially have a movement corridor associated with it. - Den sites of other furbearer species may be more associated with social, hunting, breeding, or other behaviours. - All den sites identified using Table 1.2.2 (MNR, 2015) under the habitat of ‘Denning Sites for Mink, Otter, Marten, Fisher, and Eastern Wolf’ are considered for an animal movement corridor.	Denning sites of target species were not identified in Table 1.2.2 (MNR, 2015) and are not expected to be present within the Project Location. Therefore, this feature is considered not present.	N	N	N/A	N

3.4 Summary of Site Investigation

3.4.1 Candidate Significant Natural Features

The Site Investigation confirmed the presence of several wetlands, identified two additional wetlands over 2 ha in size and determined one wetland identified through the records review to be absent. Figure 3-2 outlines the presence and absence of the relevant wetlands. Amphibian Breeding Habitat (wetlands and woodlands) were identified as cSWH. These features were subject to targeted studies as described in Section 3.3.4 and will be evaluated as part of the EoS. Marsh Breeding Bird Habitat, Bat Maternity Roost Habitat as well as Bald Eagle and Osprey Nesting Habitat were identified as possible cSWH given site characteristics, despite not being identified through targeted studies and will be carried forward to the EoS and EIS. SoCC were identified throughout the Desktop and Site Investigations, where observed during Site Investigations, an assessment of potential habitat was carried out to determine the significance of the habitat largely based on prevalence in the area. Regardless, of whether the SoCCs were observed, generally mitigation measures to mitigate impacts to these species have been incorporated into the EIS. Table 3-13 outlines the details of the cSWH within the Project Location.

Table 3-13: Confirmed and Candidate Significant Natural Features Identified During the Site Investigation

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
cSWH				
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Wetland 1	Within and adjacent to Project Location (transmission line only)	Not observed during targeted surveys.	Evaluated in EoS
Maternity Roosting Habitats	Bat 1 and Bat 2	Within Project Location	Considered as potential SWH. Acoustic assessments and general habitat availability is low, however may occur in the area generally. Considered as potential SWH.	Treated as significant and construction mitigation provided in the EIS.
Marsh Breeding Bird Habitat	Wetland 1	Within Project Location (transmission line only)	Considered as cSWH. Wetland 1 holds some potential to serve as candidate SWH.	Considered in EoS
American White Pelican (<i>Pelecanus erythrorhynchos</i>)	SoCC-01	N/A	Not observed during study. Considered as not having potential to occur within the project area.	Not treated as significant with no construction mitigation provided in the EIS.
Barn Swallow (<i>Hirundo rustica</i>)	SoCC- 02	N/A	Not observed during targeted study. The Project Location has generally been setback over 50 m from	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
			anthropogenic structures that could support Barn Swallow nesting. General mitigation measures such as timing of construction will be incorporated into the EIS.	
Black-Billed Magpie (<i>Pica hudsonia</i>)	SoCC-03	Within Project Location	Observed during targeted studies however no breeding evidence was exhibited. Generally, habitat that could support the species does exist within and within 50 m of the Project Location.	General construction mitigation provided in the EIS.
Bobolink (<i>Dolichonyx oryzivorus</i>)	SoCC-04	Within Project Location	Observed during targeted studies in discrete areas throughout the site. Where possible, the Project Location has been selected to retain grassland bird habitat not currently utilized for agriculture. Mitigation measures.	General construction mitigation provided in the EIS.
Brewer's Blackbird (<i>Euphagus cyanocephalus</i>)	SoCC-05	Within Project Location	Observed during targeted studies. Brewer's Blackbird are relatively common in agricultural or cleared areas in northern Ontario. Although presence is likely and observed, the habitat is not limited in this area of northern Ontario. General mitigation measures are prescribed in the EIS.	General construction mitigation provided in the EIS.
Canada Warbler (<i>Cardellina canadensis</i>)	SoCC-06	N/A	Not observed during targeted studies. Canada Warbler is a habitat generalist preferring mixed and wet forests. Generally habitat exists within and within 50 m of the Project Location that could support Canada Warbler, however none were recorded during targeted studies. General mitigation measures have been provided in the EIS.	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Dickcissel (<i>Spiza americana</i>)	SoCC-07	N/A	Not observed during targeted studies. This species general breeding range does not extend into northwestern Ontario and is unlikely to be present. General mitigation measures have been provided in the EIS.	General construction mitigation provided in the EIS.
Eastern Whip-Poor-Will (<i>Antrostomus vociferus</i>)	SoCC-08	N/A	Eastern Whip-Poor-Will generally prefer habitat associated with open mature woodlands. Although some potential exists within Savannah/agricultural areas associated with the Project Location, typical habitat is largely absent but could occur within 50 m of the Project Location. Mitigation measures surrounding the protection of ground nesting and woodland nesting birds has been incorporated into the EIS.	General construction mitigation provided in the EIS.
Eastern Wood-pewee (<i>Contopus virens</i>)	SoCC-09	Within Project Location	Observed during targeted studies. Eastern Wood Pewee prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Golden-Winged Warbler (<i>Vermivora chrysoptera</i>)	SoCC-10	N/A	Not observed during targeted studies. This species is known to nest in young dense shrubs and mature forest and is considered a habitat generalist. This habitat is widely prevalent within the areas surrounding the Project Location	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Olive-sided Flycatcher (<i>Contopus cooperi</i>)	SoCC-11	N/A	Not observed during study. Olive Sided Flycatcher prefers to nest in the mid canopy of forest edges. This habitat type is prevalent throughout northern Ontario and the Project Location. The Project is unlikely to limit forest edge habits or use by this species. General mitigation measures mitigate impacts to this species have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>)	SoCC-12	>50 m of Project Location	a single observation of a Red-headed Woodpecker (<i>Melanerpes erythrocephalus</i>) was incidentally observed greater than 50 m away from the Project Location. Mitigation measures surrounding the protection of potential Woodpecker nesting activities will be incorporated into the EIS.	General construction mitigation provided in the EIS.
Western Meadowlark (<i>Sturnella neglecta</i>)	SoCC-13	N/A	Observed during targeted studies in discrete areas throughout the site. Where possible, the Project Location has been selected to retain grassland bird habitat not currently utilized for agriculture. Mitigation measures have been incorporated into the EIS.	General construction mitigation provided in the EIS.
Wilson's Phalarope (<i>Phalaropus tricolor</i>)	SoCC-14	N/A	Not observed during targeted studies. Very little or no habitat exists in proximity to the Project Location for shorebird species.	Treated as significant with construction mitigation provided in the EIS.
Wood Thrush (<i>Hylocichla mustelina</i>)	SoCC-15	Within Project Location	Observed during targeted studies. Large mature forests have largely been avoided in selection of the Project Location. General mitigation measures to	General construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
			protect the species have been incorporated into the EIS.	
Monarch (<i>Danaus plexippus</i>)	SoCC-16	N/A	Not observed during targeted studies. Considered as having potential to occur within the project area in all open to semi open habitats. General mitigation measures incorporated into the EIS.	General construction mitigation provided in the EIS.
Snapping Turtle (<i>Chelydra serpentina</i>)	SoCC-17	N/A	Not observed during targeted studies. Some potential exists for habitat within wetlands. General mitigation measures have been incorporated into the EIS.	General construction mitigation provided in the EIS.
American Badger (<i>Taxidea taxus</i>)	SoCC-18	N/A	No American Badger or signs of American Badger were observed during study.	General construction mitigation provided in the EIS.
Eastern Red Bat (<i>Lasiurus borealis</i>)	SoCC-19	Within Project Location	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Carried forward to EOS
Franklin's Ground Squirrel (<i>Spermophilus franklinii</i>)	SoCC-20	N/A	Not observed during study. Considered as having potential to occur within the project area within suitable grasslands.	General construction mitigation provided in the EIS.
Little Brown Myotis (<i>Myotis lucifugus</i>)	SoCC-21	Within Project Location	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Carried forward to EOS
Silver-Haired Bat (<i>Lasionycteris noctivagans</i>)	SoCC-22	Within Project Location	Observed during study. Considered as potential SWH. Considered as having potential to occur within the project area where treed habitat occurs.	Carried forward to EOS

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
cSWH				
Amphibian Breeding Habitat (Wetland)	Amphib 3, 4, and 6	Within the Project Location and within 50 m	Candidate SWH present. Targeted studies completed.	Carried forward to EoS.
Amphibian Breeding Habitat (Woodland)	Amphib 1, 2, 5, and 7	Within the Project Location and within 50 m	Candidate SWH present. Targeted studies completed.	Carried forward to EoS.
White Tailed Deer Yard (Stratum 1)	White Tailed Deer yard	Not present	Areas have now been cleared and no longer serve as habitat.	Not carried forward
Natural Features				
Wetland 1 to 6	WL 1	Within Project Location (transmission line)	Confirmed present. Assumed significant.	Carried forward to EIS
	WL 2	Within 50 m of Project Location	Confirmed present. Assumed significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
	WL 3	Within 50 m of Project Location	Confirmed present. Assumed significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
	WL 4	>Within 50 m of Project Location	Confirmed present. Assumed significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
	WL 5	Within 50 m of Project Location	Confirmed present. Assumed significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
	WL 6	Within 50 m of Project Location	Confirmed present. Assumed significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.

3.4.2 ***Site Investigation Determinations and Corrections to the Records Review***

The REA Regulation requires that the Site Investigation include a summary of any corrections to the Records Review and the determinations made as a result of conducting the Site Investigation. A summary of the results of the Site Investigation and any corrections required to the Records Review are provided in Table 3-14 below.

Table 3-14: Summary of Corrections Required to the Records Review and Determinations Made as a Result of the Site Investigation

Natural Feature	Records Review (Y/N)	Site Investigation (Y/N)	Determinations Made as a Result of Conducting the Site Investigation	Correction Required (Y/N)	Carried Forward to the EoS (Y/N)
Wetland	Y	Y	There are wetlands in and/or within 50 m of the Project Location. Two additional wetlands were identified during the Site Investigation. The Project Location will be setback from all wetlands associated with the solar facility portion of the Project. Wetland 1 associated with the Transmission Line will be carried forward to the EIS.	Y	Y
Wildlife Habitat	Y	Y	There are cSWHs identified in and/or within 50 m of the Project Location. Targeted surveys took place to further evaluate these features as described in the EoS.	Y	Y

4. Evaluation of Significance

4.1 Regulatory Requirements

Part IV, Subsection 27 (3) of the REA Regulation requires proponents of Class 3 solar projects to prepare an EoS report for Natural Features identified in the Records Review and Site Investigation, that sets out:

- A determination of whether the natural feature is or is not provincially significant (i.e., wetlands and ANSIs) or significant (i.e., woodlands and wildlife habitat);
- A summary of the evaluation criteria or procedures used to make the determinations;
- The name and qualifications of any person who applied to evaluation criteria or procedures; and
- The dates of the beginning and completion of the evaluation.

An attestation regarding the required information or activities relevant to the EoS were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B.

4.2 Evaluation of Significance Methodology

The Records Review and Site Investigation identified potential cSWH. These features have been further studied and as outlined in Section 3.3 and will be further assessed within this EoS in comparison to the defining criteria as outline in the Ecoregion 3E (MNR, 2015) and 3W (MNR, 2017) SWH Schedules. All SoCC species with potential to occur within 50 m of the Project Location will be carried forward to the EIS with general mitigation measures applied.

4.2.1 Evaluation of Significance Details

The REA Regulation requires that the EoS includes the name and qualifications of the evaluator and beginning and completion dates of the evaluation. These dates are associated with the surveys previously highlighted in Section 3.2.1.1.

The name and qualifications of the evaluator are provided in Appendix B. The methodologies utilized for habitat use studies to confirm the presence/absence of the cSWH types identified during the Site Investigation are present within Section 3.2.2.

4.3 Evaluation of Candidate Significant Natural Features

The Records Review and Site Investigation identified cSWH in and/or within 50 m of the Project Location. All identified cSWH features identified during the desktop and Site Investigation were further studied utilizing targeted surveys to evaluate their significance.

4.3.1 Amphibian Breeding Habitat (Wetland)

Amphibian Breeding Habitat (Wetland) is defined as features with permanently wet pools subsisting until at least mid-July that are greater than 120 m away from woodlands. The SWH

Ecoregion 3W Criterion Schedule (MNR, 2017) outlines that significant Amphibian Breeding Habitats (Wetlands) contain the presence of one or more of the listed newt or salamander species or three or more of the listed frog/toad species with call level codes of three (as defined by the MMP). As described in Sections 3.2 and 3.3 anuran call surveys were completed at all relevant wetlands. Stations 3, 4 and 6 (Figure 3-1) would be considered candidates for Amphibian Breeding Habitat (Wetland) based on proximity of woodlands. At these calling stations only Spring Peeper and Gray Treefrog (*Hyla versicolor*) were listed species heard calling at call level Code 3 during the site visits. Based on these studies, the Amphibian Breeding Habitat is not considered to be significant and will not be carried forward to the EIS.

4.3.2 ***Amphibian Breeding Habitat (Woodlands)***

Amphibian Breeding Habitat (Woodland) is defined as features with permanently wet pools subsisting until at least mid-July that are greater within woodlands. The SWH Ecoregion 3W Criterion Schedule (MNR, 2017) outlines that significant Amphibian Breeding Habitats (Woodlands) contain the presence of 1 or more of the listed newt or salamander species or three or more of the listed frog/toad species with call level codes of three (as defined by the MMP). As described in Sections 3.2 and 3.3, anuran call surveys were completed at all candidate wetlands. Stations 1, 2, 5 and 7 (Figure 3-1) would be considered candidates for Amphibian Breeding Habitat (Woodlands) based on proximity of woodlands. At these calling stations only one listed species (Spring Peeper) was heard calling at call level Code 3 during the site visits. Based on these studies, the Amphibian Breeding Habitat is not considered to be significant and will not be carried forward to the EIS. General mitigation measures expected to mitigate impacts to raptor nesting have been incorporated into the EIS.

4.3.3 ***Additional Potential Significant Wildlife Habitat***

Habitat use studies did not confirm SWH related to the following habitat types. Regardless, there is some likelihood of general presence or usage within 50 m of the Project Location. These features will be evaluated generally and carried forward to the EIS to identify appropriate mitigation measures to prevent chance impacts to relevant species or habitats:

- **Bat Maternity Colonies** – Maternity colonies are found in deciduous woodlands or swamps where tree cavities or snags are found. Woodlands in and within 50 m of the Project Location have the potential to provide habitat for bat maternity colonies; however, based on the present ELC communities and acoustic monitoring results, maternity roost activity in the area is relatively low. Regardless, these generalized areas will be carried forward to the EIS and general mitigation measures will be applied.
- **Bald Eagle and Osprey Nesting Habitat (Wetland 1)** – This habitat type is associated with woodlands adjacent open water features. In association with the Project Location they are primarily associated with Wetland 1 adjacent the proposed transmission line. These generalized areas will be carried forward to the EIS with general mitigation measures applied.

- Marsh Breeding Bird Habitat (Wetland 1) – This habitat type is associated with woodlands adjacent open features primarily associated with Wetland 1 adjacent the proposed transmission line. No observations of species relevant to These generalized areas will be carried forward to the EIS with general mitigation measures applied.

4.3.4 Evaluation of Wetland Significance

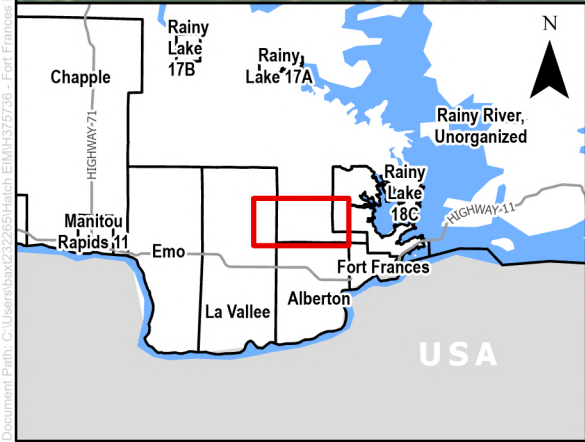
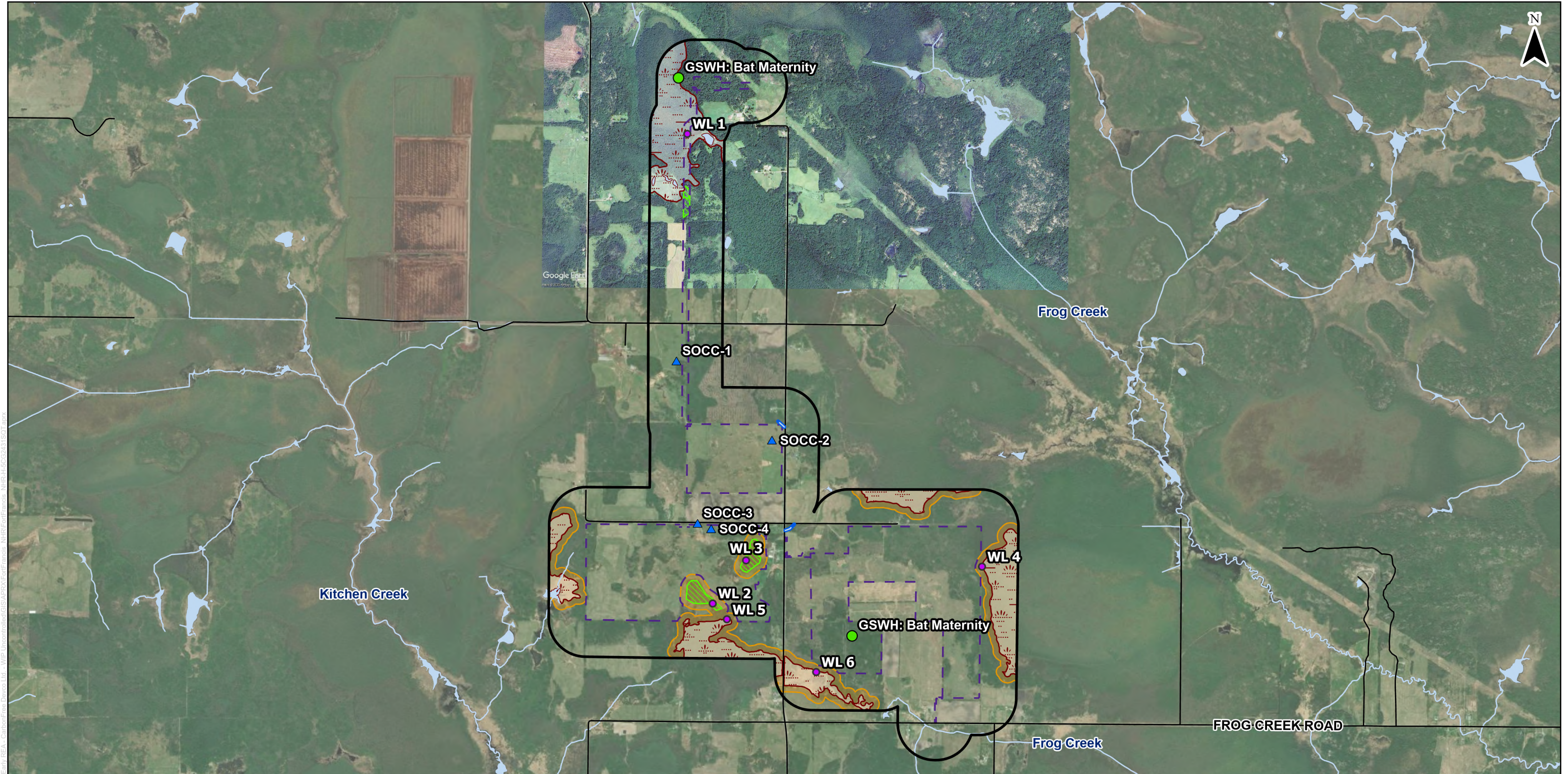
For the purposes of this NHA, all confirmed present wetlands as outlined in Figure 3-2, found to be larger than the minimum 2 ha, will be treated as significant. In all cases the Project Location can be set back 50 m and will not be carried forward into an EIS. The Project Location has been modified to reflect these setbacks in Figure 4-1.

4.4 Summary of Evaluation of Significance

The Site Investigation and EoS identified cSWH and generalized cSWH in and/or within 50 m of the Project Location. These natural features are treated as significant and carried forward to the EIS. The EIS will include mitigation measures to avoid and/or minimize potential effects associated with the Project. These features include:

- Unevaluated Wetland 1 (assumed significant);
- Marsh Breeding Bird Habitat (general potential);
- Bat Maternity Roost Habitat (general potential); and
- SoCC Habitats (general potential).

Figure 4-1 outlines the locations of the above-listed features that are treated as significant or confirmed significant. Potential locations cSWH have been identified in Figure 4-1 as well.



LEGEND

- | | | |
|---------------------------------|--------------------------|-------------------------------|
| GSWH: Bat Maternity | Unnamed Watercourse | Waterbody |
| Species of Conservation Concern | Watercourse | Additional Identified Wetland |
| Wetland | Revised Project Location | Unevaluated Wetland (MNR) |
| Road | Study Area (300m Buffer) | Wetland (50m Buffer) |

NOTES:

- Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
- Spatial referencing: NAD 1983 UTM Zone 17N
- GoogleEarth 2025 Imagery added for clarity due to cloud cover.

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PROJECT:		CarbonFree Fort Frances Project - Natural Heritage Assessment			
FIGURE TITLE:		Evaluation of Significance Results			
CLIENT:		CarbonFree Fort Frances LTD			
DWG BY: V. BAXTER	CHK BY: C. SEHL	FIG NO.: 4-1	REV NO.: 1		
DATE: 13/04/26	PAGE: 1				

5. Environmental Impact Study

5.1 REA Regulation – Environmental Impact Study

Section 38(1) of the REA Regulation prohibits the construction, installation or expansion of any component of a solar project within the following locations:

- Within or within 50 m of a provincially Significant Northern Wetland;
- In or within 50 m of a Provincially Significant ANSI (Earth Science or Life Science);
- In or within 50 m of a SWH; and
- Within 50 m of a Provincial Park or Conservation Reserve.

However, Section 38(2) allows proponents to construct within the locations noted above, subject to the completion of an EIS to assess negative effects and evaluate appropriate mitigation and monitoring measures. Section 38(2) of the REA Regulation indicates that the EIS report must:

- Identify and assess any negative environmental effects of the projects on Natural Features, Provincial Parks or Conservation Reserves referred to in Section 38(1);
- Identify mitigation measures in respect of any negative environmental effects;
- Describe how the environmental effects monitoring plan in the Design and Operations Report addresses any negative environmental effects; and
- Describe how the Project Description Report addresses any negative environmental effects.

This EIS has been prepared to address these requirements for the construction of Project components in and within 50 m of significant natural features identified in the EoS. The EIS has also been prepared in accordance with the guidelines established in the NHAG (MNR, 2026). An attestation regarding the required information or activities relevant to EIS were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the EPA and the NHAG for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

5.2 Significant Natural Features

Table 5-1 provides a summary of the Natural Features treated as significant and that require an EIS. An assessment of potential negative environmental effects and recommended mitigation measures to avoid and/or minimize potential effects are provided in Table 5-1. The Significant Natural Features are shown in Figure 3-2 and Figure 4-1.

Table 5-1: Significant Natural Features Identified in the NHA to be Assessed in the EIS

Natural Feature	Figure 4-1 ID	Proximity to Project Location	Assessment	Next Steps
Generalized cSWH				
Bat Maternity Colonies	Bat Maternity	Within and within 50 m from Project Location (solar facility and transmission line)	Woodland – potential for this habitat type to occur in woodlands in Project Location and within 50 m, although based on results of species-specific surveys it is expected to be low quality.	General mitigation measures provided in the EIS.
Marsh Breeding Bird Habitat	Wetland 1	Within and within 50 m from Project Location (transmission line)	Wetland 1 holds some potential to serve as Marsh Breeding Bird habitat, although based on results of species-specific surveys it is expected to be low quality.	General mitigation measures provided in the EIS.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Wetland 1	Within and within 50 m from Project Location (transmission line)	Woodlands – potential for this habitat type to occur in woodlands adjacent open water features associated with Wetland 1.	General mitigation measures provided in the EIS.
Grassland Nesting Birds	SoCC 4, 7, 13	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Forest Nesting Birds	SoCC 2, 3, 5, 9, 11, 12, 15	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Ground/Shrub Nesting Birds	SoCC 6, 8, 10, 14	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Monarch	SoCC 16	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.

Natural Feature	Figure 4-1 ID	Proximity to Project Location	Assessment	Next Steps
Snapping Turtle	SoCC 17	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Bats	SoCC 19, 21, 22	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Terrestrial Mammals	SoCC 18, 20	Within and within 50 m from Project Location (solar facility and transmission line)	Potential habitat for SoCC exists within or within 50 m of the Project Location.	General mitigation measures provided in the EIS.
Natural Features				
Unevaluated Wetlands	Wetland 1	Within Project Location (transmission line)	Confirmed to be present. Treated as Significant.	Treated as significant and construction mitigation provided in the EIS.
Unevaluated Wetlands	Wetland 2-6	Within 50 m of Project location (solar facility)	Confirmed to be present. Treated as Significant.	Project Location will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.

5.3 Existing Conditions of Significant Natural Features

5.3.1 *Wetland 1*

Wetland 1 is a swamp and marsh complex with multiple open water features. The wetland generally drains southwest ultimately feeding tributaries of Frog Creek. The wetland is generally palustrine. The areas within or adjacent the Project Location (transmission line) are primarily composed of treed bog with some areas of marsh. A historic ATV trail has been observed travelling through the majority of Wetland 1 which would roughly align with the proposed Project Footprint within the Wetland. Adjacent land uses include agricultural lands (row crops and cattle grazing) transmission lines at its northern boundary. The overall size of the northwestern portion of the wetland is approximately 80 ha of which approximately 19.5 ha is marsh.

5.3.2 *Marsh Breeding Bird Habitat*

Marsh Breeding Bird Habitat is prevalent within the general areas surrounding the Project; however, it is limited within the immediate Project Location. Generally, only Wetland 1 has

open water features and shallow submerged or emergent vegetation that may support Marsh Breeding Bird Habitat. Based on results of BBS in similar wetland areas associated with the transmission line, this habitat likely does not meet the criteria for confirmed SWH. Mitigation measures will be provided within the EIS to minimize impacts as required through the REA process for generalized SWH features.

5.3.3 *Bat Maternity Roost Habitat*

Bat Maternity Roost habitat is generally considered as potentially present throughout deciduous woodlands. Generally, throughout the Project Location, snag abundance was low and ELC ecosites identified are not typical of high-quality Maternity Roost Habitat. Acoustic studies completed showed low occurrences throughout the area as described in Section 3.3.5. Based on these observations, maternity roost quality is generally low within forested areas within the Project Location.

5.3.4 *Bald Eagle and Osprey Nesting Habitat*

Bald Eagles were observed within the general area of the Project Location. Nesting activities generally occurs in woodlands and adjacent open water features. Only areas associated with woodlands surrounding Wetland 1 (Figure 4-1) meet the criteria for this generalized SWH. No nesting activity was observed within 50 m of the Project Location.

5.4 Project Components and Activities

The following sections describe the construction, operation and decommissioning phases of the Project. The information is taken from the Project Description Report. More detailed information will be provided in Projects Project Description Report, Construction Plan Report, Design and Operations Report and Decommissioning Plan Report once finalized.

5.4.1 *Construction*

Construction is anticipated to occur over an approximate 24-month period, likely commencing in the first quarter of 2027, pending receipt of requisite permits and approvals. The activities associated with construction are summarized in Table 5-2.

Table 5-2: General Description of Construction Activities

Activity	Description
Access Road Construction	Activities associated with construction of internal access roads will include: • Vegetation clearing as necessary; • Topsoil removal; • Placement of granular base; • Installation of ditches and culverts, as required; and • Removal of any access roads not required, replacement of topsoil, and seeding.
Site Preparation	Activities associated with the site preparation will include: • Removal of trees and large standing vegetation from areas where PV arrays will be constructed; • Preparation and implementation of a sediment and erosion control plan; and • Determination of locations of topsoil, timber, and vegetation stockpiles (not within 50 m of any identified waterbodies).
Installation of Support Structures, PV Modules, Trackers, and Mounting Racks	Activities associated with the installation of support structures will include: • Construction of foundations and/or support structures beneath transformers, inverters and PV panels; • Installation of PV panels on racks mounted on tracking structures; • Installation of steel piles to be driven or screwed into the ground to support tracking structures and PV panels; and • Inspection of foundation construction and support structures prior to installation of PV panels and wiring.
Electrical Cable Installation	Activities associated with underground cable installation will include: • Installation of underground DC cabling from the termination point of the PV array to the inverters and medium-voltage transformers; • Installation of overhead and underground cabling from the inverters as necessary, to connect the PV array to the proposed substation and HONI transmission system; • Utilization of a simple trenching device to install the cables; whereby a slot will be opened, the cable will be laid, and the soil replaced; • Installation of a (approximately 2.5 km) overhead transmission line to enable connection to the existing HONI 230 kV transmission line. This is to be constructed between the substation yard and point of interconnection (POI) with the existing HONI transmission line; and • Removal of vegetation to install new wooden poles associated with the overhead transmission line.
Substation Construction	Activities associated with the substation construction will include: • Excavation of topsoil, installation of ground grid, foundation construction, construction of secondary containment, covering of the area with crushed stone, and installation of the substation transformer and other electrical equipment.
Site Security	Activities associated with site security will include: • Installation of perimeter fencing consisting of a chain-link fence topped with barbed wire and access gates to prevent unauthorized access.

5.4.2 Operations and Maintenance

The Project will operate year-round and generate electricity during daylight hours. The amount of power generated will depend on daily weather conditions and sufficient solar irradiation. The Project will be operated remotely. The project will primarily be monitored remotely. A permanent workforce is not expected to be required on site with the exception of maintenance and inspection staff or security personnel (as needed). To ensure the safety and integrity of the Project, access will be limited to Project personnel and unauthorized public access will be prevented by fences, gates and security procedures. Operationally, there are no significant hazards involved in the operation of the Project, nor are hazardous materials stored on site or created by the Project during its operation. The Project will not generate significant quantities of waste from its operation.

The Project solar PV modules, inverters and transformers and other electrical equipment, wiring and electrical connections will be routinely inspected, typically monthly. Any broken or malfunctioning PV modules, electrical cabling or components will be repaired or replaced by facility staff. Trash, debris and equipment parts replaced during maintenance and repair activities will be collected and properly stored in waste disposal bins. All waste collected during operation of the Project will be removed in accordance with provincial and municipal requirements. Vegetative ground cover, drainage systems and trees will be monitored and maintained, typically on a monthly basis. If required, water trucks will bring water to supply the water to support vegetative cover.

The Project has been designed to accommodate agricultural land use (agrivoltaics) throughout operations, specifically low-intensity grazing or crop production beneath and between solar panels, subject to landowner agreements and contractor availability. These activities would not require additional vegetation clearing or ground disturbance beyond that assessed for the Project. In all cases, agrivoltaics activities would be limited to the fenced in areas of the Project Location.

No hazardous chemicals are expected to be used for regular maintenance or vegetation abatement activities and will only be considered for management of invasive species, where present. The Project Location, including any drainage features (e.g., grassed swales, culverts) and any sediment and erosion control measures (e.g., riprap protection, rock flow checks) will be visually inspected for any signs of erosion or sedimentation and recorded. Regular maintenance such as the cleanout of accumulated sediment and/or the removal of any debris blockage would be conducted at that time. The need to clean the solar PV modules will be determined according to local weather conditions, such as the quantity and frequency of rain and snow at the Project Location. At the very most, it is expected that the modules will require cleaning quarterly, but it is possible that cleaning the modules will not be necessary at all. If required, water trucks will bring water to supply the water required. No chemicals will be used for the cleaning of the modules. The transformers will be visually inspected on a quarterly basis and their status recorded. Any faulty equipment that could result in an oil leak will be repaired and any observed leaks will be cleaned up immediately by

maintenance personnel. During winter, primary access roads will be ploughed to clear snow to maintain access of personnel to Project facilities.

Generally, adjacent vegetation associated with the transmission line right-of-way will be inspected annually. Maintenance clearing of the right-of-way is expected to occur on a 5-year schedule or as needed pending vegetation regrowth in the transmission right-of-way footprint.

Unless access is required for vegetation control in proximity to the Project fenceline, there will be no activities occurring within the 50 m setbacks applied to wetlands adjacent to the solar facility component of the Project Location.

5.4.3 Decommissioning

The anticipated lifespan of the Project is approximately 35 years. At that time the Project will be decommissioned or refurbished depending on market conditions and/or technological changes.

If the decision is to discontinue renewable energy generation, the decommissioning process would likely involve the following:

- Removal of the scrap metal and cabling. Where possible, these materials will be recycled, with non-recyclables taken to an approved disposal site;
- Removal of trackers, support structures, and foundations; these materials will be recycled where possible;
- Cleanup and any necessary re-grading; and
- A Decommissioning Plan Report will be developed and published as part of the REA application process.

5.5 Environmental Effects Assessment (Habitat)

One wetland (assumed to be significant as summarized in Section 5.2) has been identified in and within 50 m of the Project Location. Additionally, multiple SWH types are being considered within the Environmental Effects Assessment. In accordance with the NHAG (MNR, 2026) an assessment of direct and indirect effects to significant natural features has been provided in the sections below. An attestation regarding the required information or activities relevant to the Environmental Effects Assessment were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the *EPA* and the Natural Heritage Assessment Guide for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

5.5.1 Wetlands

With the exception of Wetland 1, the Project Location will be setback from wetland boundaries a minimum of 50 m.

Due to limitations associated with the availability of land and the presence and location of existing infrastructure, it is not feasible to locate the Project transmission line outside of Wetland 1. Similarly, due to the width of the wetland it is not feasible for the transmission line to span the wetland or avoid locating transmission poles within the feature. CarbonFree will continue to investigate alternative land access in an attempt to minimize the overlap of transmission line infrastructure with Wetland 1. These alternatives will only be considered if they further minimize the Projects overlap with Wetland 1.

In order to minimize the footprint of the transmission line within the wetland, the Projects substation will be located south of Wetland 1 to allow transmission line voltage to be stepped up to 230 kV. This will allow for greater span lengths throughout the transmission line minimizing the footprint of the Project within Wetland 1 to the extent possible. The location of the transmission line infrastructure (poles) will be optimized where possible to minimize the volume of poles within the wetland boundaries.

Direct impacts associated with the Project Location overlapping Wetland 1 cannot be avoided. Therefore, conservatively, 2.75 ha of wetland consisting primarily of bog will be cleared to facilitate the construction of the transmission line. Impacts to the wetland within this area will be minimized to the extent possible by locating poles outside of the wetland or in dry areas wherever possible. The overall right-of-way footprint represents approximately 3.4% of the overall area of the northwestern portion of the wetland. Therefore, it is not expected to have an impact on the overall function of the wetland or impact the wetland type. It is likely that following construction, the majority of the areas will remain or reestablish as bog or marsh wetland. Maintenance activities will limit the growth of trees within the transmission right-of-way.

To mitigate impacts to potential resident bird and bat species, tree clearing activities will take place outside the active bird and bat windows between April 15 to August 31 of each calendar year. This is applicable to clearing associated with construction and maintenance activities.

Transmission infrastructure is expected to largely avoid open water areas that could support Marsh Breeding Bird Habitat.

In order to ensure that the amount of vegetation removed from the wetland, work areas will be well marked and workers will be advised to remain within the bounds of the demarcated work areas. All trees will be felled into previously cleared areas, and any cleared and grubbed material will be piled away from the remnant vegetation.

Access through the site may require the use of swamp mats and tracked equipment. An invasive species management plan and equipment cleaning protocol will be implemented to reduce the likelihood of invasive species into the wetland during construction or maintenance.

Spill prevention and response measures will be put in place to reduce the likelihood of a spill occurring and impacting Natural Features.

Given the size of the wetland community, the characteristics of the wetland communities expected to be impacted (i.e., treed bog and reed marsh communities as opposed to open water communities), and remaining area of the wetland not expected to be impacted, Project is not expected effect the overall composition, habitat availability or functions associated with Wetland 1.

Potential impacts that may occur during decommission to the wetland are expected to be similar those identified above.

5.5.2 *Bald Eagle and Osprey Nesting Habitat*

Few areas within project Location are likely suitable for Bald Eagle or Osprey Nesting and are limited to the proposed transmission line. In this area, limited open water features are available to support foraging typically associated with nests. No observations of Bald Eagle or Osprey Nests were identified within the Project Location incidentally during the Site Investigation or any targeted surveys. Generally, monitoring for stick nests will occur ahead of clearing activities. Additional mitigation measures may be required in the event an active nest is identified.

5.5.3 *Bat Maternity Roost Habitat*

Potential effects of the Project on generalized maternity roost habitat can largely be avoided through seasonal timing windows associated with clearing. Generally, forested areas expected to be cleared are primarily young Aspen-Birch forest. All tree clearing will take place outside of the bat maternity roost period of April 15 to August 31. Generally, potential for maternity roost habitat in the area proposed to be cleared is marginal with limited snags posing opportunities for maternity roosts.

5.6 Environmental Effects Assessment (SoCC)

5.6.1 *Grassland Nesting Birds*

The SoCC Grassland Nesting Bird grouping consists of Bobolink, Dickcissel and Western Meadowlark. As Site Investigations suggested Bobolink and Western Meadowlark were present in the area, it is expected that a net loss of suitable breeding habitat for the species will occur in the area as grasslands will be routinely disturbed to during the projects operational phase. However, while Grasslands are typically a limited habitat type in Ontario, the habitat is abundant in extreme Northwestern Ontario given its proximity to Minnesota and Manitoba, regions that are characterized by abundant grasslands. For this reason, it is anticipated that the loss of breeding habitat will not significantly impact grassland nesting birds that inhabit the area. In addition, by clearing grasslands outside of timing windows for Nesting Zone C3, it is expected that potential for direct mortality to grassland birds will be greatly minimized. The Project Location has been selected in part to minimize to the extent possible areas that might serve as grassland bird habitat.

5.6.2 Forest Nesting Birds of Conservation Concern

The SoCC Forest Nesting Bird grouping consists of Black-billed Magpie, Brewer's Blackbird, Eastern Wood-Pewee, Olive-sided Flycatcher, Red-Headed Woodpecker, Barn Swallow (primarily nests on man-made structures in the area) and Wood Thrush. Respecting sensitive breeding bird timing windows for Nesting Zone C3, also accommodating potential for nesting woodland raptors (April 15 – August 31). Given the broad availability of treed habitats in Northwestern Ontario it is expected that the loss of potential nesting features as a result of the project will not negatively impact forest nesting bird populations or have cumulative impacts on the broader landscape for these species. The Project Location has been chosen in part to minimize impacts to mature woodlands.

5.6.3 Ground/Shrub Nesting Birds of Conservation Concern

The SoCC Shrub Nesting Bird grouping consists of Canada Warbler, Eastern Whip-Poor-Will, Golden-Winged Warbler and Wilson's Phalarope. Respecting sensitive breeding bird timing windows for Nesting Zone C3 (April 15 – August 31). Given the broad availability of fallow agricultural land and forests with well-developed shrub layers in the region, it is expected that the loss of potential nesting features as a result of the project will not negatively impact shrub nesting bird populations or have cumulative impacts on the broader landscape for these species.

5.6.4 Monarch

As Monarchs are habitat generalists, and that the Project Location is not near known stopover location or an area with an abnormally high abundance of nectar producing plants, or milkweed, loss of potential Monarch habitat within the project area is not anticipated to be of significant importance for the species, and is unlikely to have any residual impacts to monarchs that frequent the area.

5.6.5 Snapping Turtle

No turtles were observed during any of the Site Investigations. General setbacks from Wetlands are expected to protect the potential active season and overwintering habitat for the Snapping Turtle is largely absent within the Within the Project Location. Impacts associated with the transmission line within Wetland 1 cannot be avoided. However, given the very localized nature and flexible positioning of transmission lines, the Project will be able to avoid open water or flooded areas associated with most turtle habitats. It is expected that transmission line works will be scheduled to avoid potential impacts to Turtles during the active season within Wetland 1. Given the minimal footprint of transmission lines, no impacts to the ongoing function of habitat that may be present within Wetland 1 is expected outside of construction of

5.6.6 Bats

The SoCC Bat grouping consists of Silver-Haired Bat, Little Brown Myotis and Eastern Red Bat. SoCC bat habitat is present as limited maternity roost features as described in Section 5.3.3. By respecting timing windows outlined in Section 5.5.4 (the bat maternity roost

period of April 15 to August 31) in respect to vegetation, potential for directly mortality to bats will be minimized. Given the broad availability of Maternity Roost Habitat in the region, as well as the primary wooded areas being cleared consisting of pioneer-immature aspen-birch hardwood forest, it is expected that the loss of potential maternity roost features as a result of the project will not negatively impact the local bat population or have cumulative impacts on the broader landscape for these species.

5.6.7 **Terrestrial Mammals**

The SoCC Terrestrial Mammal Grouping includes American Badger and Franklin's Ground Squirrel, namely SoCC. Neither of these species were observed throughout the Site Investigations or targeted studies incidentally. Despite having differing life history strategies, both species are dependant on tallgrass prairie and are at risk of habitat loss due to agricultural conversion. As no dens or sign of either species were confirmed during any site investigations, and that observations of both respective species in the area are limited, it is anticipated that habitat is not present within the project location. Therefore, is assumed that undertaking any clearing of vegetation outside of the American Badger natal denning period (April 15 – July 31) will limit potential to disturbing American Badger or Franklin's Ground Squirrel during critical life processes should they passively use the area. Should either species or respective denning structures that were not documented during site investigations be observed during construction, operations should cease with MECP being contacted for advice on how to proceed.

5.7 **Potential Environmental Effects and Mitigation Measures**

An assessment of potential environmental effects, recommended mitigation measures, and residual effects during all Project phases is provided in Table 5-4. Characterization and assessment of residual effects following mitigation is also provided in Table 5-5, with criteria outlined in Table 5-3.

Table 5-3: Environmental Effects Analysis Criteria

Criteria	Description of Threshold Ratings
Magnitude	• Negligible (0): No detectable change from baseline conditions. • Low (1): Differs from the average value for baseline conditions but remains within the range of natural variation and below a guideline or threshold value. • Medium (2): Differs substantially from the average value for baseline conditions and approaches the limits of natural variation, but equal to or slightly above a guideline or threshold value. • High (3): Differs substantially from baseline conditions and is significantly beyond a guideline or threshold value, resulting in a detectable change beyond the range of natural variation.
Geographical Extent (Biophysical)	• Project Location (1): Impact is limited to the Project Location. • Study Area (within 50 m of Project Location) (2): Effect occurs throughout the Study Area. • Beyond Study Area (3): Effect extends beyond the Study Area.

Criteria	Description of Threshold Ratings
Duration	• Short Term (1): Impact lasts less than 2 years (e.g., during the Construction Phase of the Project). • Medium Term (2): Impact lasts from 2 to 50 years (i.e., encompassing construction and operation phases). • Long Term (3): Impact lasts from 50 to 53 years (i.e., impact lasts into the decommissioning and post-closure phase).
Frequency	• One Time (1): Impact is confined to one discrete event. • Sporadic (2): Impact occurs rarely and at sporadic intervals. • Regular (3): Impact occurs on a regular basis. • Continuous (4): Impact occurs constantly.
Reversibility	• Reversible (1): Impact can be reversed. • Partially Reversible (2): Impact can be partially reversed. • Permanent (3): Impact cannot be reversed, is of permanent duration.
Ecological and Socio-Economic Context	• High (1): The receiving environment or population has a high natural resilience to imposed stresses, and can respond and adapt to the impact. • Neutral (2): The receiving environment or population has a neutral resilience to imposed stresses and may be able to respond and adapt to the impact. • Low (3): The receiving environment or population has a low resilience to imposed stresses, and will not easily adapt to the impact.
Certainty of Knowledge	• High (1): There is a good understanding of the cause-effect relationship and all necessary data are available for the Project. The effectiveness of the mitigation measures is well known. There is a low degree of uncertainty, and variation from the predicted effect is expected to be low. • Moderate (2): The cause-effect relationships are not fully understood, there are a number of unknown external variables, or data for the Project are incomplete. The effectiveness of mitigation measures is moderately well understood. There is a moderate degree of uncertainty; while results may vary, predictions are relatively confident. • Low (3): The cause-effect relationships are poorly understood, there are a number of unknown external variables, and data for the Project are incomplete. The effectiveness of the mitigation measures may not yet be proven. High degree of uncertainty and final results may vary considerably.

5.8 Environmental Effects Monitoring Plan

In accordance with the REA Regulation, the monitoring plan identifies:

- Performance objectives in respect of the negative environmental effects to natural features;
- Mitigation measures to assist in achieving the performance objectives; and
- A program for monitoring negative environmental effects for the Project duration, including a contingency plan, to be implemented if any mitigation measures fail.

A summary of potential environmental effects and mitigations is provided in Table 5-5. This outlines the significant natural features that show potential to be impact by construction,

operational, and decommissioning activities as well as mitigation measures to be used to minimize impacts. A monitoring plan to verify that proposed mitigation measures are functioning as designed (to meet performance objectives) is provided in Table 5-5. If monitoring efforts indicate that performance objectives are not being met, contingency measures will be used to ensure that remedial action is implemented, as necessary. An attestation regarding the required information or activities relevant to the Environmental Effects Monitoring Plan were completed by a qualified person(s) as set out in the NHAG and were undertaken according to requirements, criteria and procedures set out in O. Reg. 359/09 under the *EPA* and the Natural Heritage Assessment Guide for Renewable Energy Projects is available in Appendix B. Associated qualifications of the staff responsible for completing the work is also available in Appendix B.

Table 5-4: Potential Environmental Effects and Mitigation

Natural Features - Significant or Treated as Significant	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Wetlands	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables). Operational Phase - Right-of-way maintenance (vegetation clearing). Decommissioning Phase - Removal of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Alteration to drainage regime along the edge of the wetland (Construction and Decommissioning phases): - Soil compaction; - Changes in moisture regime; - Fugitive dust; - Spills (e.g., fuel); - Sedimentation; and - Introduction of invasive species.	- Setback Project components and fencing 50 m from features. - Flag buffer area to prevent unauthorized access during construction. - Create and implement a sediment and erosion control plan to minimize sedimentation where Project activities are located within 50 m of a wetland or 120 m of a water body. - Create and implement an spills management procedure including the requirement that refueling, and fuel storage occur more than 50 m away from the natural feature. - Grading and civil design will consider existing drainage patterns to minimize impacts to wetland moisture regime. - Repairing and/or implementation of further ESC measures should visible erosion continue to occur or ESC structure effectiveness begin to degrade throughout construction.	2	2	2	3	2	2	2
Bat Maternity Roost Habitat	Construction Phase Site preparation (vegetation clearing, minor grading).	Loss of habitat function following construction of the Project is expected. Incidental take of individuals is possible if clearing takes place withing the bat maternity roost window.	- Complete site clearing and grading outside of the active bat maternity period (April 15 to August 31). - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	1	2	1	3	1	2
SoCC Grassland Nesting Birds	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place withing the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active nest be found within the clearing area and waiting for them to clear. - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.	1	2	2	1	3	2	2
SoCC Forest Nesting Birds	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place withing the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active nest be found within the clearing area and waiting for them to clear.	1	2	2	1	2	2	2
SoCC Shrub Nesting Birds	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary loss of available foraging or loss of nesting habitat. Incidental take of individuals is possible if clearing takes place withing the bird nesting window.	- Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). - Ceasing construction should an active roost be found within the clearing area and waiting for them to clear.	1	2	2	1	3	2	2

Natural Features - Significant or Treated as Significant	Construction Activity	Potential Environmental Effects	Mitigation and Contingency Measures	Residual Environmental Effects Analysis						
				Magnitude	Geographic Extent	Duration	Frequency	Reversibility	Ecological and Socio-Economic Context	Certainty of Knowledge
Monarch	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary loss of available foraging or nesting habitat. Incidental take of individuals is possible if clearing takes place during the active season.	- Complete site clearing and grading outside of the active season (April 15 to August 31). - Allow nectar producing plants and milkweeds to persist where possible during the operational phase will allow for natural generation of some of the habitats function. In doing so it is essential to clear only outside of the prescriptive timing window described above to avoid incidental take of individuals and their larvae during operation.	1	2	2	1	3	2	3
Snapping Turtle	Construction Phase Site preparation (vegetation clearing, minor grading). Operational Phase Right-of-way maintenance (vegetation clearing).	Temporary disturbance to an individual Incidental take of individuals is possible if clearing takes place during the overwintering period.	- Location of transmission poles will take place outside of 30 m of any open water feature. Tree clearing and site preparation will take place outside of the active turtle season (April 15 to October 15) in Wetland 1. - Ceasing construction should a turtle be found and moving it so a safe location within the same wetland prior to proceeding.	1	1	2	1	3	2	2
Bats	Construction Phase Site preparation (vegetation clearing, minor grading).	Loss of habitat function following construction of the Project is expected. Incidental take of individuals is possible if clearing takes place withing the bat maternity roost window.	Complete site clearing and grading outside of the active grassland bird, breeding bird nesting period or bat maternity roosting period (April 15 to August 31). Ceasing construction should an active roost be found within the clearing area and waiting for them to clear.	1	2	2	1	3	2	2
SoCC Terrestrial Mammals	Construction Phase Site preparation (vegetation clearing, minor grading).	Loss of habitat function following construction of the Project is expected. Incidental take of American Badger or Franklin's Ground Squirrel is highly unlikely but possible during natal denning periods if dens were established following site investigations.	- Undertaking any clearing of vegetation outside of the American Badger natal denning period (April 15 to July 31). - Ceasing construction should a den be found and contacting MECP for further direction on how to proceed.	1	2	2	1	3	2	2
Bald Eagle/Osprey Nesting	Construction Phase - Site preparation (vegetation clearing, minor grading). - Access roads (water crossings). - Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables). Decommissioning Phase - Removal of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).	Temporary loss of available foraging or nesting habitat.	- Complete site clearing and grading outside of the active nesting period (April 15 to August 31). - Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project. - Ceasing construction should an Osprey or Eagle be found within the clearing area and waiting for them to clear.	1	1	1	1	2	1	2

Table 5-5: Environmental Effects Monitoring Plan

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
Erosion and sedimentation resulting in increased turbidity in site runoff.	A sediment and erosion control plan expected to include vegetation retention where possible. Vegetated setbacks of Project components to sensitive features. Erosion and sedimentation controls (e.g., silt fences, rock check dams, straw bales, erosion control blankets) near ditches, on steep slopes. Sediment and erosion controls will be installed and maintained between the Project Location and wetlands or watercourses where work is required within 50 m of wetlands or 120 m of water features.	No long-term erosion from site over and above existing conditions.	Visual monitoring of vegetated areas and drainage features that convey runoff to identify areas of erosion (e.g., rills, gullies). Visual monitoring of ESC measures to ensure they remain effective throughout construction.	Throughout Project Location.	During regular site inspection throughout construction and operation.	Visual monitoring of erosion would identify potential areas of concern.	Maintenance and improvement requirements actioned in the event of continuing visible or new erosion and reported internally throughout monthly construction monitoring reports. Ongoing status of permanent features reported internally within annual operations report.	Erosion remediated as necessary to ensure no long-term erosion issues.
Potential for adverse surface water, groundwater and soil quality due to accidental spills.	Standard mitigation to prevent spills and minimize magnitude of spills if they occur. For example, refueling at least 30 m from wetlands and water features.	No long-term environmental effects due to spills.	Visual monitoring at transformer locations and monitoring of spill prevention measures.	Throughout Project Location.	During regular site inspections.	Visual monitoring would identify potential areas of concern and ensure that spill prevention and control measures are functioning as designed and protocols are being implemented as specified in plans to meet performance objectives.	All spills and remediation efforts reported throughout monthly construction monitoring reports. Ongoing status reported internally within annual operations report. Reportable spills must be documented and reported to the Ontario Spills Action Centre.	Spill contingency measures implemented as necessary in the event of a spill. Following spill event, response will be reviewed to determine if additional or altered response protocols are necessary to meet performance objectives.
Increases in surface water runoff from Project Location and changes in drainage/hydrological conditions.	Stormwater management measures which may include enhanced vegetated swales, ditch flow controls and filter strips.	Minimize changes to surface water runoff conditions to receiving waterbodies.	Visual assessment of structural stability of mitigation measures and identification of unintended impacts.	Throughout Project Location.	During regular site inspections.	Visual monitoring will confirm that stormwater management measures remain as designed and allow identification of deficiencies.	Reported internally annual operations report.	Stormwater management measures will be remediated as necessary to ensure that they are functioning as designed.
Incidental take of wildlife.	Speeds to be limited on Project Location and maintenance workforce to be made aware of potential for wildlife on the Project Location. Vegetation clearing will be conducted in fall/winter months outside of the nesting period for breeding birds and outside of the bat maternity roosting period (April 15 to August 31).	Avoid occurrences of incidental take.	Visual monitoring of access roads and other site areas will be conducted by maintenance personnel and occasions of incidental take reported as they are identified.	Throughout Project Location.	Ongoing during maintenance activities.	Incidental take will be reported by maintenance staff to personnel responsible for environmental protection if incidents occur.	Any incidental takes on wildlife will be documented internally and reported within monthly construction monitoring reports. No operational requirement. Any incidental takes of SoCC in which case reporting will be immediate to the MECP/Environment Canada.	If incidental take of SoCC are recorded, work will be ceased until a trained biologist can state that no other individuals of the species is present in the work area. Injured wildlife, specifically reptiles, will be taken to a wildlife rehabilitation center. Should incidental take occur regularly,

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan					Contingency Measures
			Methodology	Monitoring Locations	Frequency	Rationale	Reporting Requirements	
								increased measures to better clear wildlife prior to operations will be implemented as appropriate.
Loss of SoCC Grassland Bird Habitat	Phasing Project to prevent impacts to SoCC (i.e., clearing outside of the active nesting period).	Minimize impacts to grassland nesting birds.	Earthworks activities in grassland habitats to be phased prior to any nesting activity becoming established. This will be confirmed via biologist where necessary. Vegetation on site may be maintained to a level to minimize grassland bird habitation.	Grassland habitats.	Ahead of earthworks starting in new locations.	Only tall grass areas are likely to support any grassland bird species including all SoCC observed within the Project area.	Documented internally in Construction monitoring reports.	Nest sweep of areas immediately ahead of construction. Delaying construction to outside of nesting period.
Disturbance of Bald Eagle Nesting Activity	Preclearing survey for stick nests.	Identify potential nesting features ahead of tree clearing.	Visual monitoring.	Wetland 1 and woodlands.	Ahead of clearing activities	Nesting has potential to occur in super canopy trees near wetlands.	Documented internally as needed monthly Construction monitoring reports.	Phasing activities outside of when nests may be active or sensitive timeframes.

6. NHA Conclusions

The Project Location is primarily on disturbed pasture, agricultural lands, and regenerative forest habitats. The Project Location is generally characterized as having an abundance of grassland, meadow, and prairie habitat that are utilized as pasturelands for cattle, hay production, and annual row crops. The NHA identified wetlands and cSWH that have prescribed setbacks for protection. Furthermore, an EIS was prepared to address potential negative effects to these features as well as identify monitoring activities to confirm the effectiveness of the recommended mitigation measure. Mitigation measures have been identified to avoid and minimize potential effects. A monitoring plan has also been developed to ensure that performance objectives are met and implement contingency plans if mitigation measures fail. The mitigation measures identified in the Project Description Report and NHA EIS are intended to address potential environmental effects for both significant and non-significant natural features.

Overall, the Project has been sited to avoid sensitive natural features, where possible. While there are potential negative environmental effects identified for this Project, the majority of effects can be mitigated through construction phasing and standard Best Management Practices.

7. References

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Appendix A

Species Identified in the Records Review

Common Name	Scientific Name	SARA Schedule 1	COSEWIC	PSO	COSSARO	S-Rank	Source
Amphibians							
American Toad	<i>Anaxyrus americanus</i>					S5	ORAA
Boreal Chorus Frog	<i>Pseudacris maculata</i>					S5	ORAA
Gray Treefrog	<i>Hyla versicolor</i>					S5	ORAA
Northern Leopard Frog	<i>Lithobates pipiens</i>					S5	ORAA
Spring Peeper	<i>Pseudacris crucifer</i>					S5	ORAA
Wood Frog	<i>Lithobates sylvaticus</i>					S5	ORAA
Birds							
Alder Flycatcher	<i>Empidonax alnorum</i>					S5B	OBBA
American Bittern	<i>Botaurus lentiginosus</i>					S5B	OBBA
American Crow	<i>Corvus brachyrhynchos</i>					S5	OBBA
American Goldfinch	<i>Spinus tristis</i>					S5	OBBA
American Kestrel	<i>Falco sparverius</i>					S4	OBBA
American Redstart	<i>Setophaga ruticilla</i>					S5B	OBBA
American Robin	<i>Turdus migratorius</i>					S5	OBBA
American White Pelican	<i>Pelecanus erythrorhynchos</i>				SC	S3B, S34	OBBA
American Woodcock	<i>Scolopax minor</i>					S4B	OBBA
Bald Eagle	<i>Haliaeetus leucocephalus</i>				NAR	S4	OBBA
Baltimore Oriole	<i>Icterus galbula</i>					S4B	OBBA
Barn Swallow	<i>Hirundo rustica</i>	THR	SC		SC	S4B	NHIC
Barred Owl	<i>Strix varia</i>					S5	OBBA
Belted Kingfisher	<i>Megaceryle alcyon</i>					S5B, S4N	OBBA
Black-and-White Warbler	<i>Mniotilta varia</i>					S5B	OBBA
Black-Billed Cuckoo	<i>Coccyzus erythrophthalmus</i>					S4, S5B	OBBA
Black-Billed Magpie	<i>Pica hudsonia</i>					S2	NHIC
Blackburnian Warbler	<i>Setophaga fusca</i>					S5B	OBBA
Black-capped Chickadee	<i>Poecile atricapillus</i>					S5	OBBA
Black-Throated Green Warbler	<i>Setophaga virens</i>					S5B	OBBA
Blue Jay	<i>Cyanocitta cristata</i>					S5	OBBA
Blue-Headed Vireo	<i>Vireo solitarius</i>					S5B	OBBA
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	SC		THR	S4B	OBBA
Boreal Owl	<i>Aegolius funereus</i>					S4	OBBA
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>					S2	NHIC
Broad-Winged Hawk	<i>Buteo platypterus</i>					S5B	OBBA
Brown Creeper	<i>Certhia americana</i>					S5	OBBA
Brown Thrasher	<i>Toxostoma rufum</i>					S4B	OBBA
Brown-Headed Cowbird	<i>Molothrus ater</i>					S5	OBBA
Canada Goose	<i>Branta canadensis</i>					S5	OBBA
Canada Jay	<i>Perisoreus canadensis</i>					S5	OBBA
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC		SC	S5B	OBBA
Cedar Waxwing	<i>Bombycilla cedrorum</i>					S5	OBBA
Chestnut-Sided Warbler	<i>Setophaga pensylvanica</i>					S5B	OBBA
Chipping Sparrow	<i>Spizella passerina</i>					S5B, S3N	OBBA
Clay-colored Sparrow	<i>Spizella pallida</i>					S4B	OBBA
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>					S4, S5B	OBBA
Common Goldeneye	<i>Bucephala clangula</i>					S5	OBBA
Common Grackle	<i>Quiscalus quiscula</i>					S5	OBBA
Common Loon	<i>Gavia immer</i>		NAR			S5	OBBA
Common Raven	<i>Corvus corax</i>					S5	OBBA
Common Yellowthroat	<i>Geothlypis trichas</i>					S5B, S3N	OBBA
Connecticut Warbler	<i>Oporornis agilis</i>					S5B	OBBA
Cooper's Hawk	<i>Astur cooperii</i>		NAR			S4	OBBA
Dark-Eyed Junco	<i>Junco hyemalis</i>					S5	OBBA
Dickcissel	<i>Spiza americana</i>					S2M	OBBA
Downy Woodpecker	<i>Dryobates pubescens</i>					S5	OBBA
Eastern Bluebird	<i>Sialia sialis</i>		NAR			S5B, S4N	OBBA
Eastern Kingbird	<i>Tyrannus tyrannus</i>					S4B	OBBA
Eastern Phoebe	<i>Sayornis phoebe</i>					S5B	OBBA
Eastern Warbling Vireo	<i>Vireo gilvus</i>					S5B	OBBA
Eastern Whip-Poor-Will	<i>Antrostomus vociferus</i>	THR	SC		SC	S4B	OBBA
Eastern Wood-pewee	<i>Contopus virens</i>		SC		SC	S4B	OBBA
European Starling	<i>Sturnus vulgaris</i>					SNA	OBBA
Field Sparrow	<i>Spizella pusilla</i>					S4B, S3N	OBBA
Golden-Crowned Kinglet	<i>Regulus satrapa</i>					S5	OBBA
Golden-Winged Warbler	<i>Vermivora chrysoptera</i>	THR	THR	SC	SC	S3B	OBBA
Gray Catbird	<i>Dumetella carolinensis</i>					S5B, S3N	OBBA

Common Name	Scientific Name	SARA Schedule 1	COSEWIC	PSO	COSSARO	S-Rank	Source
Great Blue Heron	<i>Ardea herodias</i>					S4	OBBA
Great Crested Flycatcher	<i>Myiarchus crinitus</i>					S5B	OBBA
Great Gray Owl	<i>Strix nebulosa</i>		NAR			S4	OBBA
Great Horned Owl	<i>Bubo virginianus</i>					S4	OBBA
Green-Winged Teal	<i>Anas crecca</i>					S4B, S4N,	OBBA
Hairy Woodpecker	<i>Leuconotopicus villosus</i>					S5	OBBA
Hermit Thrush	<i>Catharus guttatus</i>					S5B, S4N	OBBA
House Sparrow	<i>Passer domesticus</i>					SNA	OBBA
Indigo Bunting	<i>Passerina cyanea</i>					S5B	OBBA
Killdeer	<i>Charadrius vociferus</i>					S4B	OBBA
Least Flycatcher	<i>Empidonax minimus</i>					S5B	OBBA
LeConte's Sparrow	<i>Ammospiza leconteii</i>					S5B	OBBA
Lincoln's Sparrow	<i>Melospiza lincolnii</i>					S5B	OBBA
Long-eared Owl	<i>Asio otus</i>					S4	OBBA
Magnolia Warbler	<i>Setophaga magnolia</i>					S5B	OBBA
Mallard	<i>Anas platyrhynchos</i>					S5	OBBA
Merlin	<i>Falco columbarius</i>		NAR			S5	OBBA
Mourning Dove	<i>Zenaida macroura</i>					S5	OBBA
Mourning Warbler	<i>Geothlypis philadelphia</i>					S5B	OBBA
Nashville Warbler	<i>Leiothlypis ruficapilla</i>					S5B	OBBA
Northern Flicker	<i>Colaptes auratus</i>					S5	OBBA
Northern Harrier	<i>Circus hudsonius</i>		NAR			S5B, S4N	OBBA
Northern House Wren	<i>Troglodytes aedon</i>					S5B	OBBA
Northern Parula	<i>Setophaga americana</i>					S5B	OBBA
Northern Rough-Winged Swallow	<i>Stelgidopteryx serripennis</i>					S4B	OBBA
Northern Saw-Whet Owl	<i>Aegolius acadicus</i>					S5	OBBA
Northern Waterthrush	<i>Parkesia noveboracensis</i>					S5B	OBBA
Northern Yellow Warbler	<i>Setophaga aestiva</i>					S5B	OBBA
Olive-sided Flycatcher	<i>Contopus cooperi</i>		SC		SC	S4B	OBBA
Ovenbird	<i>Seiurus aurocapilla</i>					S5B	OBBA
Palm Warbler	<i>Setophaga palmarum</i>					S5B	OBBA
Pileated Woodpecker	<i>Dryocopus pileatus</i>					S5	OBBA
Pine Siskin	<i>Spinus pinus</i>					S5	OBBA
Purple Finch	<i>Haemorhous purpureus</i>					S5	OBBA
Red-Breasted Nuthatch	<i>Sitta canadensis</i>					S5	OBBA
Red-Eyed Vireo	<i>Vireo olivaceus</i>					S5B	OBBA
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	END	END		END	S3	NHIC
Red-Tailed Hawk	<i>Buteo jamaicensis</i>					S5	OBBA
Red-Winged Blackbird	<i>Agelaius phoeniceus</i>					S5	OBBA
Ring-Necked Duck	<i>Aythya collaris</i>					S5B, S4N	OBBA
Rock Pigeon (Feral Pigeon)	<i>Columba livia</i>					SNA	OBBA
Rose-Breasted Grosbeak	<i>Pheucticus ludovicianus</i>					S5B	OBBA
Ruby-Crowned Kinglet	<i>Corthylio calendula</i>					S5B, S3N	OBBA
Ruby-Throated Hummingbird	<i>Archilochus colubris</i>					S5B	OBBA
Ruffed Grouse	<i>Bonasa umbellus</i>					S5	OBBA
Sandhill Crane	<i>Antigone canadensis</i>					S5B, S3N	OBBA
Savannah Sparrow	<i>Passerculus sandwichensis</i>					S5B, S3N	OBBA
Scarlet Tanager	<i>Piranga olivacea</i>					S5B	OBBA
Sedge Wren	<i>Cistothorus stellaris</i>					S4B	OBBA
Sharp-Tailed Grouse	<i>Tympanuchus phasianellus</i>					S4	OBBA
Song Sparrow	<i>Melospiza melodia</i>					S5	OBBA
Sora	<i>Porzana carolina</i>					S5B	OBBA
Spotted Sandpiper	<i>Actitis macularius</i>					S5B	OBBA
Swainson's Thrush	<i>Catharus ustulatus</i>					S5B	OBBA
Swamp Sparrow	<i>Melospiza georgiana</i>					S5B, S4N	OBBA
Tree Swallow	<i>Tachycineta bicolor</i>					S4, S5B	OBBA
Trumpeter Swan	<i>Cygnus buccinator</i>		NAR			S4	OBBA
Turkey Vulture	<i>Cathartes aura</i>					S5B, S3N	OBBA
Veery	<i>Catharus fuscescens</i>					S5B	OBBA
Western Meadowlark	<i>Sturnella neglecta</i>					S1B	OBBA
White-Breasted Nuthatch	<i>Sitta carolinensis</i>					S5	OBBA
White-Throated Sparrow	<i>Zonotrichia albicollis</i>					S5	OBBA
Wilson's Phalarope	<i>Phalaropus tricolor</i>					S2B, S4M	OBBA
Wilson's Snipe	<i>Gallinago delicata</i>					S5B	OBBA
Wilson's Warbler	<i>Cardellina pusilla</i>					S5B	OBBA
Winter Wren	<i>Troglodytes hiemalis</i>					S5B, S4N	OBBA

Common Name	Scientific Name	SARA Schedule 1	COSEWIC	PSO	COSSARO	S-Rank	Source
Wood Duck	<i>Aix sponsa</i>					S5B, S3N	OBBA
Wood Thrush	<i>Hylocichla mustelina</i>	THR			SC	S4B	OBBA
Yellow-Bellied Flycatcher	<i>Empidonax flaviventris</i>					S5B	OBBA
Yellow-Bellied Sapsucker	<i>Sphyrapicus varius</i>					S5B, S3N	OBBA
Yellow-Rumped Warbler	<i>Setophaga coronata</i>					S5B, S4N	OBBA
Yellow-Throated Vireo	<i>Vireo flavifrons</i>					S4B	OBBA
Butterflies							
Acadian Hairstreak	<i>Satyrrium acadica</i>					S4	OBA

Common Name	Scientific Name	SARA Schedule 1	COSEWIC	PSO	COSSARO	S-Rank	Source
American Lady	<i>Vanessa virginiensis</i>					S5	OBA
Aphrodite Fritillary	<i>Argynnis aphrodite</i>					S5	OBA
Arctic Fritillary	<i>Boloria chariclea</i>					S4	OBA
Arctic Skipper	<i>Carterocephalus mandan</i>					S5	OBA
Atlantis Fritillary	<i>Argynnis atlantis</i>					S5	OBA
Banded Hairstreak	<i>Satyrrium calanus</i>					S4	OBA
Black Swallowtail	<i>Papilio polyxenes</i>					S5	OBA
Bog Copper	<i>Tharsalea epixanthe</i>					S4, S5	OBA
Bog Fritillary	<i>Boloria eunomia</i>					S5	OBA
Bronze Copper	<i>Tharsalea hyllus</i>					S5	OBA
Brown Elfin	<i>Callophrys augustinus</i>					S5	OBA
Cabbage White	<i>Pieris rapae</i>					SNA	OBA
Canadian Tiger Swallowtail	<i>Pterourus canadensis</i>					S5	OBA
Checkered White	<i>Pontia protodice</i>					SNA	OBA
Clouded Sulphur	<i>Colias philodice</i>					S5	OBA
Columbine Duskywing	<i>Erynnis lucilius</i>					S4	OBA
Common Ringlet	<i>Coenonympha californica</i>					S5	OBA
Common Roadside Skipper	<i>Amblyscirtes vialis</i>					S4	OBA
Common Wood-nymph	<i>Cercyonis pegala</i>					S5	OBA
Compton Tortoiseshell	<i>Nymphalis l-album</i>					S5	OBA
Dion Skipper	<i>Euphyes dion</i>					S4	OBA
Dorcas Copper	<i>Tharsalea dorcas</i>					S5	OBA
Dreamy Duskywing	<i>Erynnis icelus</i>					S5	OBA
Dun Skipper	<i>Euphyes vestris</i>					S5	OBA
Eastern Comma	<i>Polygonia comma</i>					S5	OBA
Eastern Pine Elfin	<i>Callophrys niphon</i>					S5	OBA
Eastern Tailed Blue	<i>Cupido comyntas</i>					S5	OBA
European Skipper	<i>Thymelicus lineola</i>					SNA	OBA
Eyed Brown	<i>Lethe eurydice</i>					S5	OBA
Freija Fritillary	<i>Boloria freija</i>					S4	OBA
Gray Comma	<i>Polygonia progne</i>					S5	OBA
Great Spangled Fritillary	<i>Argynnis cybele</i>					S5	OBA
Green Comma	<i>Polygonia faunus</i>					S4	OBA
Harvester	<i>Feniseca tarquinius</i>					S4	OBA
Hoary Comma	<i>Polygonia gracilis</i>					S4	OBA
Hobomok Skipper	<i>Lon hobomok</i>					S5	OBA
Indian Skipper	<i>Hesperia sassacus</i>					S4	OBA
Jutta Arctic	<i>Oeneis jutta</i>					S4	OBA
Least Skipper	<i>Ancyloxypha numitor</i>					S5	OBA
Little Wood-satyr	<i>Megisto cymela</i>					S5	OBA
Long Dash Skipper	<i>Polites mystic</i>					S5	OBA
Meadow Fritillary	<i>Boloria bellona</i>					S5	OBA
Milbert's Tortoiseshell	<i>Aglais milberti</i>					S5	OBA
Monarch	<i>Danaus plexippus</i>	END			SC	S4B, S2N	OBA
Mourning Cloak	<i>Nymphalis antiopa</i>					S5	OBA
Mustard White	<i>Pieris oleracea</i>					S4	OBA
Northern Azure	<i>Celastrina lucia</i>					S5	OBA
Northern Broken-dash	<i>Polites egeremet</i>					S5	OBA
Northern Cloudywing	<i>Thorybes pylades</i>					S5	OBA
Northern Crescent	<i>Phyciodes cocyta</i>					S5	OBA
Northern Pearly-eye	<i>Lethe anthedon</i>					S5	OBA
Orange Sulphur	<i>Colias eurytheme</i>					S5	OBA
Painted Lady	<i>Vanessa cardui</i>					S5B	OBA
Peck's Skipper	<i>Polites coras</i>					S5	OBA
Pink-edged Sulphur	<i>Colias interior</i>					S5	OBA
Question Mark	<i>Polygonia interrogationis</i>					S5	OBA
Red Admiral	<i>Vanessa atalanta</i>					S5B	OBA
Satyr Comma	<i>Polygonia satyrus</i>					S4	OBA
Silver-bordered Fritillary	<i>Boloria selene</i>					S5	OBA
Silvery Blue	<i>Glaucopsyche lygdamus</i>					S5	OBA
Silvery Checkerspot	<i>Chlosyne nycteis</i>					S5	OBA
Striped Hairstreak	<i>Satyrrium liparops</i>					S5	OBA
Tawny-edged Skipper	<i>Polites themistocles</i>					S5	OBA
Viceroy	<i>Limenitis archippus</i>					S5	OBA
Western Branded Skipper	<i>Hesperia colorado</i>					S4, S5	OBA
Western Tailed Blue	<i>Cupido amyntula</i>					S4	OBA

Common Name	Scientific Name	SARA Schedule 1	COSEWIC	PSO	COSSARO	S-Rank	Source
White Admiral	<i>Limenitis arthemis arthemis</i>					S5	OBA
Fish							
Northern Pike	<i>Esox lucius</i>					S5	ARA
White Sucker	<i>Catostomus commersonii</i>					S5	ARA
Reptiles							
Red-sided Gartersnake	<i>Thamnophis sirtalis parietalis</i>					SU	ORAA
Eastern Gartersnake	<i>Thamnophis sirtalis</i>					S5	ORAA
Snapping Turtle	<i>Chelydra serpentina</i>		SC		SC	S4	ORAA
Western Painted Turtle	<i>Chrysemys picta bellii</i>				NAR	S4	ORAA

Appendix B

Qualified Persons and Attestation

CORE TEAM MEMBER

Michael Babin

NATURAL HERITAGE LEAD



Education & Qualifications

Graduate Diploma, Ecosystem Restoration, Niagara College, 2020
BASC. (Hons), Ecology and Geography, University of Guelph, Guelph, ON, 2019

Experience

6 years

Specialties

Ecology, Biology, Reptiles, Amphibians,
Environmental Assessment, EIS, Vegetation, Plants,
Trees.

Michael is a Biologist/Terrestrial Ecologist working out of the Environment and Sustainability department at Hatch. Michael graduated from the University of Guelph in 2019 with a Bachelor of Arts and Sciences in Ecology and Geography. He later received a graduate diploma in Ecosystem Restoration from Niagara College. Michael began his career shortly after primarily working with Species at Risk including the Eastern Massasauga, Spotted Turtle, Fowler's Toad and more. While continuing to work with Species at Risk, Michael started to expand his career into environmental consulting, primarily within solar and wind power projects, where he has completed several projects in Ontario, Quebec and New Brunswick. During this time, he expanded his knowledge of permitting processes, various aquatic and terrestrial studies as well as environmental policy and legislation.

Michael has demonstrated the ability to manage projects, acquire permits, acquire funding, lead, and contribute to Renewable Energy Approval Technical Studies.

He also has developed an understanding of how to query, access, request, analyze and interpret geospatial data within Ontario. Has completed Data Sensitivity Training with ability to access to restricted data sets pertaining to natural features and wildlife within Ontario. Has relevant knowledge and skills in the use of Ecological Land Classification. Has knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats. Has Knowledge and fauna and floral ecology inclusive of use of SWH during various life stages. Has relevant knowledge and is skilled in assessing, developing and monitoring mitigation approaches related to natural features and wildlife. Finally, he also has relevant knowledge and is skilled in developing and applying monitoring protocols, inclusive of an understanding of statistical sampling design.

RELEVANT HATCH PROJECT EXPERIENCE

Rainy River Solar REA- Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Kynoch Solar REA – Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents. He also actively participated in public consultation meetings and engagement with landowners.

Fort Frances Solar REA– Carbonfree - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Odessa and Tamworth Solar REAs - Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to solar projects undergoing various stages of Renewable Energy Approvals. He is actively undertaking evaluations of significance and environmental impact studies for these projects.

Kingston Area Solar REA Feasibility - acted as natural heritage lead for over five properties with potential to serve as IESO bids for Solar Energy. He was responsible for coordinating multidisciplinary teams to identify regulatory constraints and potential SWH to be considered within natural heritage systems.

Prince Wind Farm – Evolgen - Natural heritage lead for site investigations and environmental assessment technical reports pertaining to the first Wind Facility Repowering in Ontario. On this project he developed a scoring method to assist in the micro-siting infrastructure around natural heritage features.



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Brighton Mountain Wind Farm, JD Irving - Contributions to the writing of Terrestrial Wildlife, Bat and Avian Technical Studies to accompany a large scope EIA for the erection of a Wind Farm in New Brunswick. Michael is also developing survey protocols and undertaking Nighttime Migrant Acoustic Analysis to help inform potential mitigation strategies.

Des Neiges Wind Farm - Leading a team of ten individuals to complete a list of species specific survey requirements (e.g., Bicknell's Thrush) in difficult terrain across several large properties in remote Quebec.

Lake Gibson Allanburg Intake No. 2 – Ontario Power Generation - Historical Data review, Regulatory Review, ELC, SAR Surveys and Groundwater Monitoring to inform a potential small scale hydroelectric facility.

Wainfleet Bog Conservation Area, Ontario, Canada. Biologist - Participated in and lead activities related to groundwater monitoring, surface water monitoring, species at risk mark-recapture studies, invasive species management, overwintering studies, permitting processes, stakeholder communications and more.



CORE TEAM MEMBER

Audrey Nerino

ENVIRONMENTAL SCIENTIST



Education & Qualifications

Honours Bachelor Environmental Studies,
Geography, Lakehead University, 2019
Certificate in Geomatics, Lakehead University,
2019

Experience

6+ years

Specialties

Environmental Assessment, Engagement and
Consultation

Audrey has over six years of experience working with Indigenous partners and stakeholders across multiple projects related to infrastructure, energy, and social development. Her role as an environmental scientist with Hatch has allowed her to gain knowledge of various environmental legislation and regulations through assisting in conducting baseline studies for terrestrial and aquatic ecosystems, including pileated woodpecker cavity surveys, grassland and breeding bird surveys, and amphibian surveys, and assisting in the development of environmental and cultural heritage reviews to support electricity projects in Ontario. She additionally has experience assisting with environmental monitoring and compliance for wind energy projects.

Audrey has gained an understanding of how to query, access, request, analyze, and interpret geospatial data within Ontario. She has completed Data Sensitivity Training to access restricted data sets pertaining to natural features and wildlife within Ontario. She additionally has relevant knowledge and skills in the use of Ecological Land Classification and knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats.

RELEVANT PROJECT EXPERIENCE

Rainy River Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Rainy River, ON - Assisted in undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval, including breeding bird surveys, migratory bird surveys, and anuran surveys. Assisted in authoring technical documents required by the REA process, including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Fort Frances Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Rainy River, ON - Assisted in undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Assisted in authoring technical documents required by the REA process including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Kynoch Solar Project Ltd. – Renewable Energy Approval (REA), CarbonFree, Kynoch, ON - Assisted in authoring technical documents required by the REA process including waterbody assessment and natural heritage assessment reports. Audrey additionally led the development of consultation report.

Prince Wind Farm, Evolgen, Prince Township, ON - Assisted in undertaking site investigations such as migratory bird surveys for the first Wind Facility Repowering in Ontario. Additionally assisted in translating field data from various site investigations into outputs for reporting.

Brighton Mountain Wind Farm, J.D Irving, Unorganized, NB - Assisted in undertaking environmental compliance monitoring for construction operations and site investigations, including pileated woodpecker cavity surveys.

Highway 17 Realignment and Hewitson Creek Culvert Replacement, Ontario Ministry of Transportation, Wiggins Township, ON - Assisted in performing terrestrial and fisheries field investigations involving terrestrial plant species inventory, stream measurement and profile activities for several watercourses within the project area, and fish habitat analysis over several days.

Micro-Modular Reactor Project at Chalk River, Global First Power, Chalk River, ON - Collected and performed analysis of environmental baseline data to determine whether valued environmental components of Indigenous communities may be impacted by project activities.



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CORE TEAM MEMBER

Christopher Sehl

ENVIRONMENTAL BIOLOGIST



Education & Qualifications

Post Graduate Diploma, Environmental Management, Niagara College, Niagara on the Lake (Ontario), Canada, 2017

BSc in Environmental Sciences, Majoring in Environmental Biology University of Guelph, Guelph (Ontario), Canada, 2015

Experience

10 years

Specialties

Ontario Wetland Evaluator Certification

Natural Heritage Survey Specialists

Environmental Assessments

Environmental Compliance Monitoring

Chris has been Environmental biologist within the Hatch Environmental Services team for the past nine years. He holds a Bachelor of Science from the University of Guelph where he majored in the Environmental Sciences and a Post Graduate Diploma from Niagara College in Environmental Management and Assessment. Chris has spent his career at Hatch working on renewable energy Projects specializing in natural heritage, species and risk and impact assessments. He is experienced in assessing impacts from various types of construction activities, proposing and monitoring mitigation measures for their effectiveness in the field. Chris has worked and led numerous environmental assessment type projects, baseline field programs, construction monitoring programs and post construction monitoring programs. Chris's areas of expertise include desktop assessments, Species at Risk surveys, environmental assessments, environmental monitoring, fish spawn and community assessments, aquatic habitat assessments, permitting and approvals (Department of Fisheries and Oceans, Ministry of Environment Parks and Conservation, Conservation Authorities and the Ministry of Natural Resources and Forestry), water quality sampling, and soil sampling.

While at Hatch, Chris has gained a wealth of experience working with construction and engineering teams to improve compliance with relevant laws and regulations, permits and best management practices. Recently, Chris was a member of the Owners Engineer team for the Wataynikaneyap Power Transmission Line Project. The Wataynikaneyap Power Transmission Line Project is a 1800 km transmission line construction Project tasked with connecting 17 remote First Nation Groups to the Ontario grids surrounding Pickle Lake and Red Lake in Northwest Ontario. Chris's role involved permit coordination, environmental compliance coordination and report review and creating/managing the Project change request process.

RELEVANT PROJECT EXPERIENCE

Meteorological Tower Crown Land Projects. Invenergy. Several Locations, Ontario Canada - Chris assisted Invenergy in the coordination of on-site environmental surveys and archaeological surveys necessary to receive Land Use Permit for Meteorological Towers. This involved creating and submitting all necessary documents associated with the Approvals, Permitting and Requirements Documents (APRD), reviewing natural heritage information and assisting in site selection, liaising with indigenous communities and the Ministry of Natural Resources and Forestry.

Lake Gibson Hydro Project, Ontario Power Generation, Thorold, Ontario Canada - OPG engaged Hatch to complete necessary environmental assessments and permitting activities associated with their proposed 4 mw Hydroelectric Project in Thorold Ontario. Chris is acting as the deputy Project Manager for the Project and is responsible for the creation of necessary Indigenous, Community and Agency Engagement Plans to be implemented over the lifespan of the Project. The Project is subject to the federal Impact Assessment Act as it will utilize federal, transport Canada owned lands (St Lawrence Seaway Management Corporation).

Marmora Glen Energy Hub Project, Northland Power Inc., and Ontario Power Generation, Ontario, Canada - Chris completed the preliminary aquatic environment habitat characterization for the Project and has participated in the terrestrial, aquatic, Species at Risk and water quality investigations to date on the site. Chris has been an active participant in the generation of the Initial Project Description in support of the Impact Assessment Act process for the Project. The Project seeks to repurpose an



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abandoned mine into a 400 MW closed-loop pumped storage hydroelectric facility, complemented by 30 MW of ground-mounted solar.

Thorold Peaker Project, Northland Power Inc., Thorold, Ontario Canada - Northland Power engaged Hatch to support them in their bid on IESO's Long Term Request for Proposals process for energy capacity projects in Ontario. The proposed Project included a new 200 MW natural gas peaker plant and associated transmission infrastructure. The project included a concept for integration renewable natural gas into the system to reduce the carbon footprint and public perception of the Project. Chris assisted the client in delineating what Federal and Provincial permits and approvals would be required through a regulatory roadmap document. Chris's team also created Northland Powers Community and Indigenous Engagement Plan for the Project as well as contributing to and participating in Northland Power's in person and virtual community public information centres as required within IESO RFP process. As an outcome of the regulatory roadmap process Northland Power decided to progress the required Impact Assessment Act process through the submission of an Initial Project Description document to the Impact Assessment Agency of Canada. The initial Project Description Report was generated by Hatch on a strict timeline to receive feedback from the IAAC prior to Northland Power committing to their bid to IESO. Comments on the Draft Initial project Description document from IAAC were minimal and focused on engagement gaps previously identified by Hatch through their Indigenous Engagement Plan. Hatch was able to finalize the Initial Project Description Report for Northland Power within the ambitious timelines required to support Northland Power's internal gating process.

Wataynikaneyap Power LP, Wataynikaneyap Power Transmission Project, Thunder Bay, Ontario, Canada - Wataynikaneyap Power Transmission Project is a transmission line Project connecting 17 remote First Nation communities in northwestern Ontario. As a part of the Hatch Owners Engineer team for the Project, Chris acts as the Environmental and Permitting lead. This included reviewing and evaluating proposals from prequalified EPCM contract bidders as well as creating and reviewing several construction environmental management plans in line with the Projects approved Environmental Assessments. Chris also participated in creating and presenting the Projects environmental orientation to the EPCM contractor during the Project kick-off event. He plays an ongoing critical role providing oversight into Project permitting activities and monitoring the contractor's environmental compliance with regulatory requirements and the EPCM contract. Chris leads the Project change management team for the Owner and coordinates requests to change the project layout with a team of community engagement specialists and design engineers to ensure proposed new alignments meet existing permits/approvals or permits are amended as appropriate.

Algoma Power Incorporated, Number 4 Expansion and Reroute Project, Deaibrillville, Ontario, Canada - Chris completing a records review for Algoma Power to identify potential gaps in information needed for Project permits. Following this activity Chris acted as a site biologist completing surveys confirm the environmental conditions of the proposed site. Chris also participated in First Nation engagement activities for the five First Nation groups with traditional territory overlapping the proposed Project including working with Michipicoten First Nation during field surveys. Chris also participated in agency consultation and generated permits for the Project. During Project execution, Chris will complete contractor compliance field visits to evaluate whether the chosen contractor is meeting the client's environmental performance standards, permit requirements and general best management practices.

City of Kingston, Kingston Third Crossing, Kingston, Ontario, Canada - Kingston Third Crossing was a successful bridge Project that spanned the Rideau Canal – a Parks Canada National Historic Site. Chris completed a suite of environmental and aquatic surveys in support of the Kingston Third Crossing Project. Chris authored several sections of the Detailed Impact Assessment document created in support of the Canadian Environmental Assessment Act process. Throughout construction, Chris completed regular site inspections in support of Fisheries Act and Parks Canada compliance efforts.

OPG, Waba Dam Rehabilitation Project, Arnprior, Ontario, Canada - Chris assisted in numerous on-site environmental baseline and monitoring surveys. Chris provided support in several permitting facets including Information Gathering Forms for Species at Risk and supporting the Project Description Document. Chris performed on site compliance monitoring of OPG's chosen Contractor, assisted with fish salvage operations and completed sediment and erosion control and site isolation monitoring activities.

German Solar Company. German Solar Projects, several locations Southwestern Ontario, Canada - German Solar Company contracted Hatch to support REA services to assist in obtaining the necessary permits and approvals for 23 solar projects on individual land parcels in southwest Ontario. Chris assisted in creating the Natural Heritage Assessments for the Project, including completing desktop assessments, evaluating present features for Candidate significant wildlife habitats, performing environmental impact studies and recommending setbacks and mitigation measures in line with the Natural Heritage Assessment Guide. Chris carried through this work into the required technical documents (Construction Plan Report, Decommissioning Plan Report). Chris also assisted in compiling required consultation summaries based on public meetings and ministry correspondences, in support of the submission of the REA documents.



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Metrolinx, Metrolinx Rail Expansion, Various locations, Ontario, Canada - Chris has assisted in various terrestrial habitat assessments, SAR surveys and tree/vegetation inventories in support of the Metrolinx Rail expansion Projects. Other terrestrial surveys included the assessment of potential Bat habitat by conducting a Bat Snag Density Survey and Blanding's turtle Visual Encounter Survey in accordance with the Ministry of Natural Resources and Forestry protocols. Given the survey results, suggestions were made to the design engineering team to minimize impact to present species.

Public Works and Government Services Canada, Timiskaming Ontario Dam Replacement, Timiskaming, Ontario, Canada - Chris served as the field crew leader through three years of post-construction monitoring for spawning Walleye, White Sucker, Lake Sturgeon and Lake Whitefish in 2017 and 2018 as required by the clients Fisheries Act Authorization. This involved gill net and egg mat investigations to confirm the presence of the spawning species. Chris also was responsible for authoring the yearly post construction monitoring reports to be submitted to the Ontario Ministry of Natural Resources and Federal Department of Fisheries and Oceans. Chris also led a successful juvenile Sturgeon and Whitefish recruitment study during the Fall of 2019 which included an assessment of 9 km of the Ottawa River.

De Beers Group of Companies, Post Closure Monitoring Activities, Ontario, Canada - In support of a Phase 2 Environmental Site Investigation and Mine Closure Plan being prepared for the De Beers Victor Mine Site, Chris has regularly participated in the Bi-annual Groundwater Monitoring Program. This program involves the sampling of over 40 different groundwater wells and 10 different areas for surface water sampling. While on site Chris was able to support the client as well by performing post-restoration environmental monitoring focused on a nearby stream restoration Project. This work is completed according to an agency accepted (Fisheries and Oceans Canada) post-construction restoration and monitoring plan proposed to the relevant governing agencies (Fisheries and Oceans Canada).

HydroMega, Trenton Lock 1 Hydroelectric Project, Trenton, Ontario, Canada - Chris conducted several baseline targeted terrestrial habitat surveys in support of the Detailed Impacts Analysis (Section 67 of CEAA 2012). Surveys included: turtle nesting surveys, reptile and turtle visual encounter surveys, reptile hibernacula surveys, bat maternity roost surveys, breeding bird call surveys, and anuran call surveys. Chris was also assisted in the creation of the Terms of Reference for the Detailed Impact Analysis Report for this project as well as research and writing of the environmental assessment report.



CORE TEAM MEMBER

Taylor Simpanen

NATURAL HERITAGE LEAD



Education & Qualifications

Fish and Wildlife Technician, Fleming College, Diploma, 2018
Arboriculture and Urban Forestry, Fleming College, Diploma, 2019

Experience

6 years

Specialties

Ecology, Biology, Avian Ecology and Identification, Species at Risk Assessments, Reptiles, Amphibians, Environmental Assessment, EIS, Vegetation, Plants, Trees.

Taylor is a Biologist/Avian Specialist working out of the Environment and Sustainability department at Hatch. Taylor provides expertise in avian, fish, wildlife, and forestry studies, supported by a Fish and Wildlife diploma from Fleming College in Ontario. As part of Hatch's Natural Heritage team, he has conducted Species at Risk (SAR) screenings for renewable energy including over 8 solar facilities, 2 major wind facilities, as well as infrastructure, and rail projects, drawing on more than five years of field experience across Ontario, Alberta, New Brunswick, Nova Scotia, and Quebec. His technical background includes pre and post construction monitoring, including targeted SAR surveys, aquatic and terrestrial assessments, surface water sampling, breeding bird surveys, migration monitoring surveys, bat habitat assessments and acoustic analysis, and baseline natural heritage and water body assessments to support permitting and environmental planning. He has led various field programs, completed habitat suitability assessments, created wildlife mitigation and avoidance guidance, and authored Environmental Impact Assessments (EIA), Renewable Energy Act (REA) reports, and existing environment reports. Taylor also has developed and implemented biological field protocols across numerous projects and holds certifications in Ecological Land Classification, Maritime Wetland Delineation, OBBN, Backpack Electrofishing (Class 2 Crew Lead), and Butternut Health Assessments.

Taylor has demonstrated the ability to manage projects, acquire permits, acquire funding, lead, and contribute to Renewable Energy Approval Technical Studies.

He also has developed an understanding of how to query, access, request, analyze and interpret geospatial data within Ontario. Has completed Data Sensitivity Training with NHIC, granting him the ability to access to restricted data sets pertaining to natural features and wildlife within Ontario. Has relevant knowledge and skills in the use of Ecological Land Classification. Has knowledge of Flora and Fauna ecology/identification in Ontario's Terrestrial and Aquatic Habitats. Taylor also has knowledge of fauna and floral ecology inclusive of use of SWH during various life stages. Has relevant knowledge and is skilled in assessing, developing and monitoring mitigation approaches related to natural features and wildlife. Finally, he also has relevant knowledge and is skilled in developing and applying monitoring protocols, inclusive of an understanding of statistical sampling design.

RELEVANT PROJECT EXPERIENCE

Rainy River Solar REA- Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.

Kynoch Solar REA - Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents. He also actively participated in public consultation meetings and engagement with landowners

Fort Frances Solar REA- Carbonfree. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to a renewable energy approval. Lead author of several technical documents typical of the REA process including waterbody assessment reports, natural heritage assessments, environmental impact studies, evaluations of significance and consultation documents.



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Brandon and Tamworth Solar REAs. Leading and undertaking terrestrial and significant wildlife habitat studies pertaining to solar projects undergoing various stages of Renewable Energy Approvals. He is actively undertaking evaluations of significance and environmental impact studies for these projects.

Prince Wind Farm – Brookfield Renewables. Natural heritage lead for site investigations and environmental assessment technical reports pertaining to the first Wind Facility Repowering in Ontario. On this project he developed a scoring method to assist in the micrositeing infrastructure around natural heritage features.

Brighton Mountain Wind Farm, JD Irving. Contributions to the writing of Terrestrial Wildlife, Bat and Avian Technical Studies to accompany a large scope EIA for the erection of a Wind Farm in New Brunswick. Michael is also developing survey protocols and undertaking Nighttime Migrant Acoustic Analysis to help inform potential mitigation strategies.

Lake Gibson Allanburg Intake #2 – Ontario Power Generation. Historical Data review, Regulatory Review, ELC, SAR Surveys, Breeding Bird Surveys to inform a potential small scale hydroelectric facility.

Bird Studies Canada, Ontario, Canada. Biologist/Census Monitor Technician. Participated in and lead activities related to migratory bird movements, inclusive of SAR to determine population estimates, species abundance and diversity in support of Birds Canada's overall goal of tracking migratory bird movements and population trends.

