

**Report**

**CarbonFree Rainy River - Natural Heritage Assessment**

**H375916-0000-840-066-0002**

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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	Confirmation letter from MNR	Forthcoming
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, significant wildlife habitat, provincial park, or conservation reserve, unless an Environmental Impact Study is prepared in accordance with the Natural Heritage Assessment Guide	Section 5

## Glossary

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

<b>SARO</b>	Species at Risk in Ontario
<b>SoCC</b>	Species of Conservation Concern
<b>SWH</b>	Significant Wildlife Habitat
<b>SWHTG</b>	Significant Wildlife Habitat Technical Guide

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## 1. Introduction

CarbonFree Rainy River Ltd. (CarbonFree) is proposing to develop an up to 60-megawatt (MW) Class 3 solar photovoltaic (PV) project (“the Project”) adjacent to Highway 71 and Mather Rd, in the Township of Chapple, Ontario, approximately 40 km northwest of Fort Frances. The Project is located in Ecodistrict 5S within the Ministry of Natural Resources (MNR) 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, 2012). This NHA report will be submitted to Ministry of Natural Resources (MNR) for review and comment and issuance of a confirmation letter. The NHA and MNR confirmation letter 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, consist 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 Location<sup>1</sup> 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. Written confirmation and any comments from MNR in respect of the NHA (Section 28, Subsections 37(2)(b)(c) and 38(2)(b)(c)) are also required as part of the application for the issuance of a REA.

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<sup>1</sup> “ 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 Risk<sup>2</sup> (SAR) is not part of the NHA. Provincially protected SAR will be discussed in the Approvals and Permitting Requirements Document (APRD) and MECP *Endangered Species Act* permitting processes separately. Federally listed species on Schedule 1 of the *Species at Risk Act* (SARA) are not protected under the *Endangered Species Act* (ESA), 2007, and will be considered a species of conservation concern (SoCC) in 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 50 m of a provincial plan area, i.e., Greenbelt Plan, Oak Ridges Moraine Conservation Plan (ORMCP), Niagara Escarpment Plan (NEP), and 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 REA Regulation requires a determination, including a confirmation letter from MNR, on the presence/absence of provincial parks and conservation reserves on and within 50 m of the Project Location.

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).

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<sup>2</sup> SAR include species that are designated as Extirpated, Endangered or Threatened and listed on the SARO List (O.Reg. 230/08) made under the *Endangered Species Act* (ESA), 2007.

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 reviews 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 floodline.*”
- **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 Policy Statement issued under Section 3 of the Planning Act.*”

The Northern Wetland definition is applicable to this Project Location. 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. To substitute this, Ecoregion 3E (MNR, 2015) has been adopted in order to assess the site for Candidate Significant Wildlife Habitats, with reference to the Natural Heritage Reference Manual (NHRM) (MNR, 2010) and Significant Wildlife Habitat Technical Guide (SWHTG) (MNR, 2000) where necessary. 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 Species of Conservation Concern** – Defined as “*habitats of species that are designated at the national level as endangered or threatened by COSEWIC, which are not protected in regulation under Ontario’s ESA; habitats of species listed as special concern under the ESA on the SARO List (formerly referred to as “Vulnerable” in the SWHTG); and habitats of species that are rare or substantially declining, or have a high percentage of their global population in Ontario*” (MNR, 2010).

More specifically, species of conservation concern (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 and not protected in regulation under the *Ontario Endangered Species at Risk Act* (ESA).
- ◆ **Provincially Rare Species** – These species are designated by the MNR and assessed under two categories: species listed as Special Concern on the Species at Risk in Ontario (SARO) List; and species that are assigned a provincial (i.e., sub-national) conservation status rank of S1 to S3 and are not on the SARO 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 the Provincial Policy 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 of 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. A flowchart showing the NHA process, as reproduced from the NHAG (MNR, 2012), is provided in Figure 1-1:

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

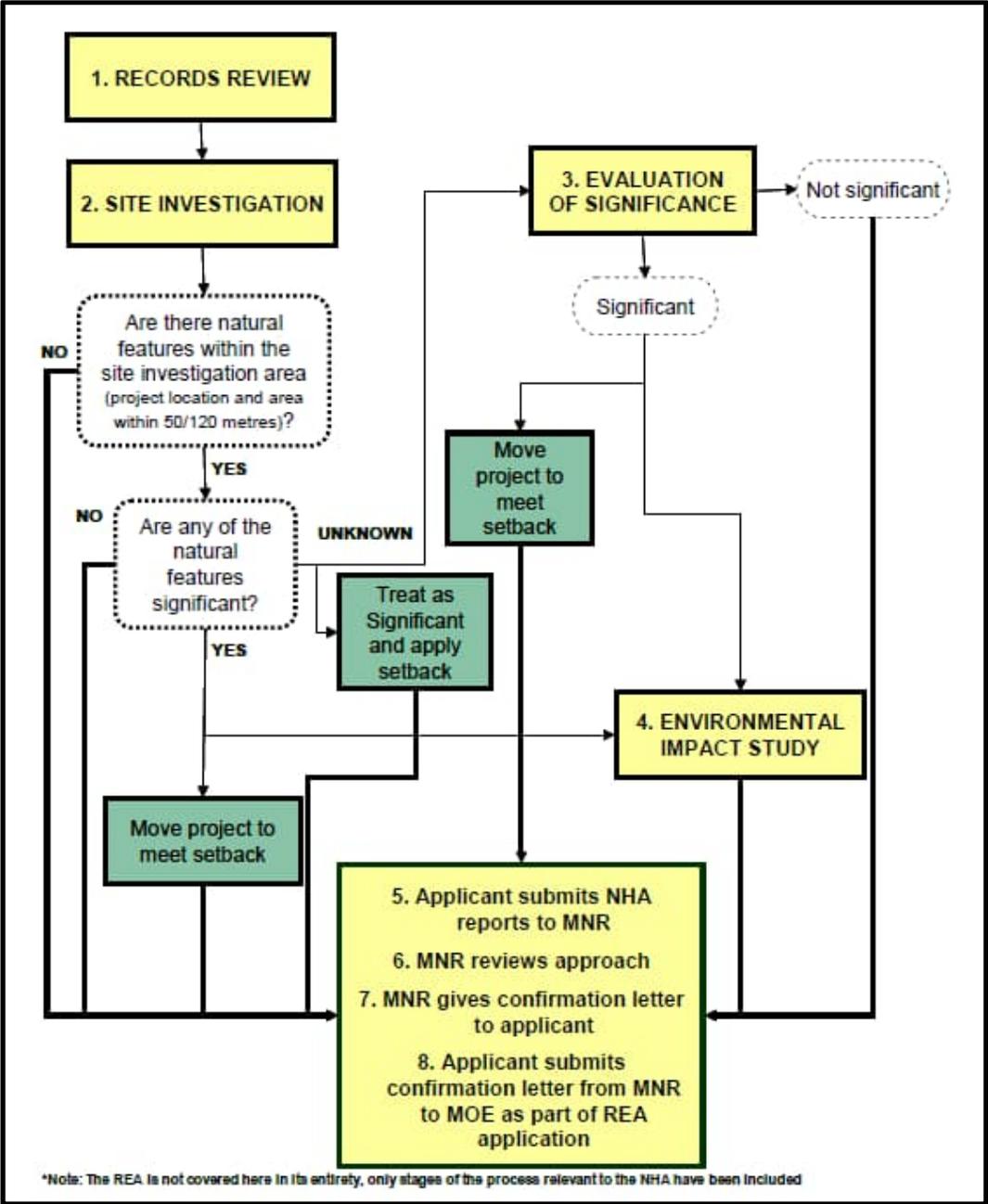


Figure 1-1: Flowchart of the NHA Process, Reproduced from the NHAG (MNR, 2012)

## 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 District of Rainy River, Township of Chapple, 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 Oak Ridges Moraine Conservation Plan.

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).

### 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.
- 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.
- 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.

## 2.2.1 **Ministry of Natural Resources and Forestry Records**

The following information sources from the MNR were reviewed for records related to Provincial Parks, Conservation Reserves, and Natural Features within 1 km<sup>2</sup> of the Project Location:

- **Land Information Ontario (LIO) Mapping** – LIO data is maintained by the MNR and provides key provincial geospatial data about Ontario. Shapefiles obtained from the LIO 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 50 m of the Project Location (Rainy River District map layer). The data layers reviewed are provided in Section 2.3.
- **Natural Heritage Information Centre Make a Map (NHIC MaM)** – 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 species of conservation concern (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 km<sup>2</sup> map squares. The map squares reviewed and that overlap the Project Location, include: 15VP3396, 15VP3397, 15VP3398. 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** – 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<sup>2</sup> of the Project Location.

## 2.2.2 **Township of Chapple Records**

The Project Location is situated within the Township of Chapple. The Official Plans (OP) for the Township were reviewed.

- **Township of Chapple Official Plan (amended in 2013)** – The Township’s Natural Heritage Features, Cultural Heritage Resources and Development Constraints were reviewed.
- **Township of Chapple Official Plan – Endangered and Threatened Species.**

- **Township of Chapple Official Plan (Schedule C)** – Natural/Cultural Features and Development Constraints.
- **Township of Chapple Official Plan (Ministerial Approval 2023)** – The Schedules and Figures were reviewed and include
  - ◆ Schedule A – Land Use Designations.
  - ◆ Schedule B – Wellhead Protection Area.
  - ◆ Schedule C – Natural/Cultural Heritage and Development.

### **2.2.3 *Atlas of the Mammals of Ontario***

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 Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 3E (MNR, 2015) or that are considered to be a species of conservation concern. Species considered as part of the Records Review are listed in Appendix A.

### **2.2.4 *Ontario Reptile and Amphibian Atlas***

A review of the Ontario Reptile and Amphibian Atlas (Ontario Nature, 2015) 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 km<sup>2</sup> map squares. The species documented within map square 15VP39 which overlaps the Project Location were included in the Records Review and considered in respect of the wildlife habitat assessment. Species documented in the map squares are listed in Appendix A.

### **2.2.5 *Important Bird Areas of Canada***

The Important Bird Areas (IBA) Canada website was reviewed to determine whether any IBAs are in or within 50 m 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 50 m of the Project Location.

### **2.2.6 *Ontario Breeding Bird Atlas***

The Ontario Breeding Bird Atlas (OBBA) (Bird Studies Canada *et al.*, 2006) was reviewed to determine which species have the potential to occur on or within 50 m of the Project Location. The OBBA provides a list of bird species that have been observed within a 10 x 10 km<sup>2</sup> area during surveys completed between 1981 to 1985 and 2001 to 2005. 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 is 15TVP39. 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.

**2.2.7 Ontario Butterfly Atlas**

The Ontario Butterfly Atlas was reviewed to determine which species have the potential to occur on or within 50 m of the Project Location. The Ontario Butterfly Atlas provides a list of butterfly species that have been observed within a 10 x 10 km<sup>2</sup> map square. The map square that overlaps the Project Location is 15VP39. 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**

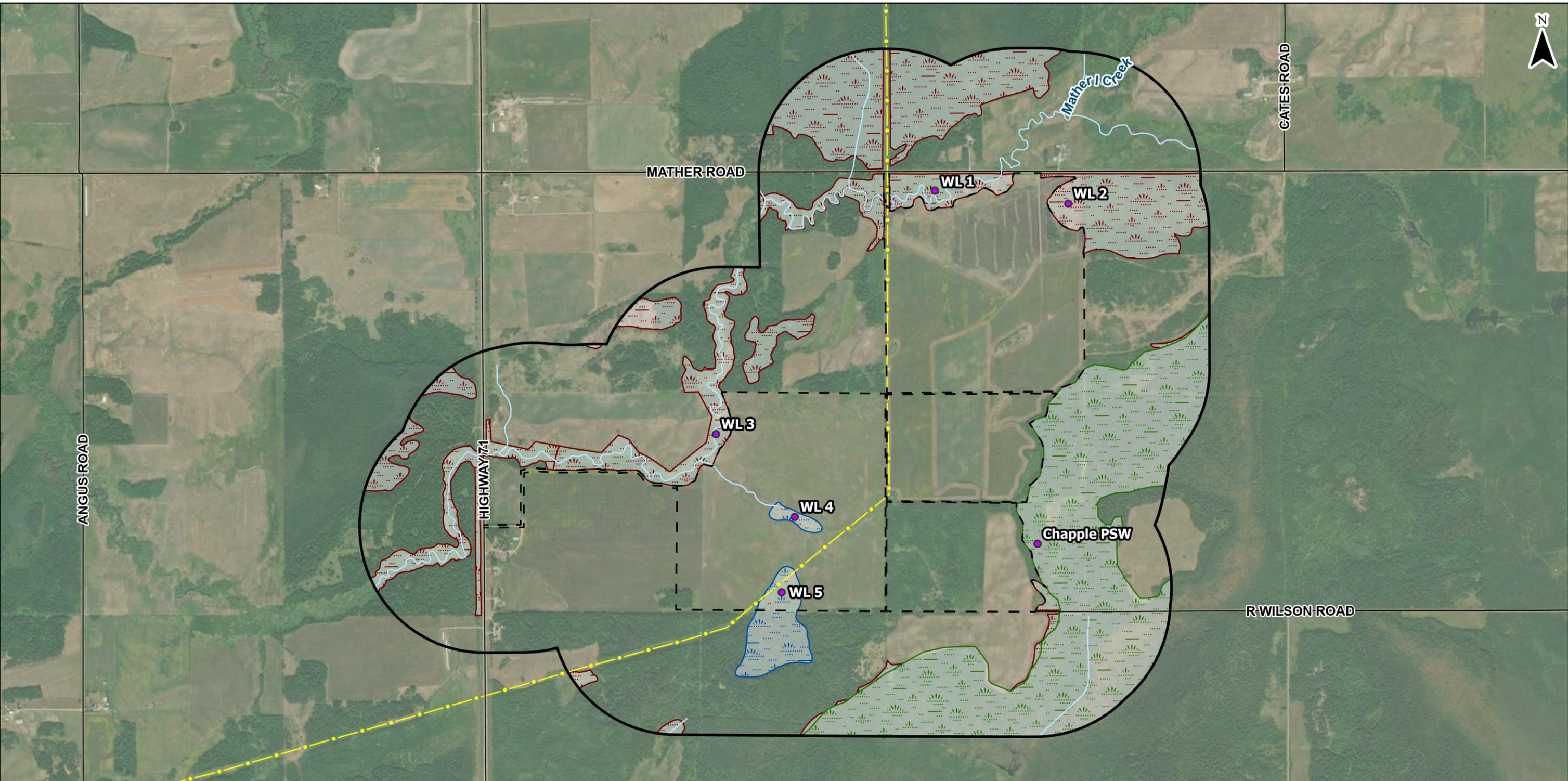
A Records Review was conducted in order to determine the presence/absence of Provincial Parks, Conservation Reserves and Natural Features in or within 50 m of the Project Location. The results of the Records Review and determinations made are provided in the subsequent sections and illustrated in Figure 2-1.

**2.3.1 Provincial Plan Areas**

The Project Location is not in or within a Provincial Plan area (i.e., NEP, Greenbelt Plan, ORMCP), as shown in Table 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 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Ministry of Natural Resources and Forestry (MNR)</b>				
LIO Mapping	N	N	N/A	CLUPA datasets
Crown Land Use Policy Atlas	N	N	N/A	Crown Land Use Data layer



**LEGEND**

Wetland	Chapple Official Plan Wetland
Road	Unevaluated Wetland (MNR)
Transmission Line	Provincially Significant Wetland (MNR)
Watercourse	Project Location
Study Area (500m Buffer)	

**NOTES:**

- Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
- Spatial referencing: NAD 1983 UTM Zone 15N
- Chapple Official Plan Wetlands digitized from the Township of Chapple's Final Official Plan, 2013



<b>PROJECT:</b> CarbonFree Rainy River Project – Natural Heritage Assessment		<b>FIGURE TITLE:</b> Site Investigation Desktop Wetlands	
<b>CLIENT:</b> CarbonFree Rainy River LTD			
<b>DWG BY:</b> V. BAXTER	<b>CHK BY:</b> C. SEHL	<b>FIG NO.:</b> 2-1	<b>REV NO.:</b> 1
<b>DATE:</b> 09/01/26	<b>PAGE:</b> 1		

### 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 50 m 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 below, there are no Provincial Parks or Conservation Reserves in or within 50 m 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 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Ministry of Natural Resources and Forestry (MNR)</b>				
LIO 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
Crown Land Use Policy Atlas	N	N	N/A	Crown Land Use Data layer
<b>Township of Chapple</b>				
Township of Chapple Official Plan	N	N	N/A	Entirety of plan including - Environmental Protection Areas

### 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 50 m of the Project Location. Confirmed<sup>3</sup> 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 50 m 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.

<sup>3</sup> Confirmed provincially significant ANSIs and wetlands and significant wildlife habitat are identified by MNR.

**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 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Ministry of Natural Resources and Forestry (MNR)</b>				
LIO Mapping	N	N	N/A	ANSI dataset
NHIC MaM	N	N	N/A	ANSI layer
<b>Township of Chapple</b>				
Township of Chapple	N	N	N/A	Schedule C - Natural / Cultural Features and Development Constraints

2.3.3.2 *Wetlands*

As shown in Table 2-4 and Figure 2-1, there are wetlands in and within 50 m 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. Corrections and evaluations of these wetlands are further described in Section 3 and Section 4.

**Table 2-4: Summary of Data Reviewed for Wetlands**

Information Source	Wetlands			
	In Project Location (Y/N)	Within 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Ministry of Natural Resources and Forestry (MNR)</b>				
LIO Mapping	Y	Y	N/A	Wetland dataset
Rainy River District Data	Y	Y	N/A	Wetland layer
NHIC MaM	Y	Y	Both unevaluated and evaluated mapped wetlands, including Provincially Significant Wetland (PSW)	Wetland layer
<b>Township of Chapple</b>				
Township of Chapple Official Plan	Y	Y	Wetlands and Significant Wetlands	Land Use Designations Map (Schedule A) and Natural / Cultural Features and Development Constraints (Schedule C)

### 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 50 m 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 Significant Wildlife Habitat (SWH) Criteria Schedules for Ecoregion 3E (MNR, 2015). 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 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Ministry of Natural Resources and Forestry (MNR)</b>				
LIO Mapping	N	Y	White-tailed Deer Yard (Stratum 1) – Overwintering Yards were identified just outside of the Project Location (within 50 m).	The following datasets were reviewed: 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.	NHA MaM
<b>Township of Chapple</b>				
Township of Chapple Official Plan	N	N	No specific wildlife habitat information is available. Wetlands, and ANSIs are considered as supporting wildlife habitat.	Chapple OP Schedules and Figures

Information Source	Wildlife Habitat			
	In Project Location (Y/N)	Within 50 m of the Project Location (Y/N)	Description	Data Reviewed
<b>Non-Government Species-Related Documents</b>				
Atlas of the Mammals of Ontario	Possible	Possible	No wildlife habitat information available. However, mammals whose ranges overlap the Project Location are considered in respect of potential wildlife habitat.	Species range maps
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 15VP39 (and associated species)
IBA of Canada	N	N	There are no IBAs within a 50 km radius of the Project Location. The closest IBA (ON144 - Lake of the Woods Sand Spit Archipelago) is located 55 km Northwest 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 square 15TVP39 (and associated species)

## 2.4 Summary of Records Review

A summary of the results of the Records Review and determinations made is provided in Table 2-6. 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 2-6, there are no Provincial Parks, Conservation Reserves or ANSIs (earth science or life science) in or within 50 m of the Project Location. These features do not need to be verified as their locations are determined and mapped by the provincial government.

**Table 2-6: Summary of the Records Review Determinations for the Rainy River Solar Project**

Determination to be Made	Yes/No	Site Investigation Required to Verify Records Review Findings?
Is the Project Location in or within 50 m of a Provincial Park or Conservation Reserve?	No	<sup>1</sup> Provincial Park: No <sup>1</sup> Conservation Reserve: No
Is the Project Location in a Natural Feature?	Yes (possible)	<sup>1</sup> Earth Science ANSI: No <sup>1</sup> Life Science ANSI: No Wetland: Yes <sup>2</sup> Wildlife Habitat: Yes
Is the Project Location within 50 m of a Natural Feature?	Yes (possible)	<sup>1</sup> Earth Science ANSI: No <sup>1</sup> Life Science ANSI: No Wetland: Yes <sup>2</sup> Wildlife Habitat: Yes

**Notes:**

1. Provincial Parks, Conservation Reserves and ANSIs do not need to be field verified if the Records Review confirmed they are not present.
2. No specific wildlife habitats have been identified. However, 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 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.
- The distance from the Project Location to the boundaries of any Natural Feature that was identified in the Records Review or the Site Investigation.

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 3.4.3
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: <ol style="list-style-type: none"> <li>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.</li> <li>2. The location and type of each natural feature identified in relation to the Project Location.</li> <li>3. All distances required to be determined for any natural feature that was identified in the Records Review, the Site Investigation or Baseline Studies.</li> </ol>	Figure 3-1 and Figure 3-2
A summary of the methods used to make observations for the purposes of the Site Investigation and Baseline Studies.	Section 3.2
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: <ol style="list-style-type: none"> <li>1. The dates and times of the beginning and completion of the Site Investigation and baseline studies.</li> <li>2. The duration of the Site Investigation and baseline studies.</li> <li>3. The weather conditions during the Site Investigation and Baseline Studies.</li> <li>4. Field notes kept by the person conducting the Site Investigation.</li> </ol>	Sections 3.2.1.1 and 3.3.1

Site Investigation Report Requirements	Report Section
If an alternative investigation of the site was conducted: <ol style="list-style-type: none"> <li>1. The dates of the collection of the data used in the Site Investigation and baseline studies.</li> <li>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.</li> </ol>	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 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 Baseline Studies are provided in Section 3.3.1 below.

#### 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 abutting lands are active agricultural fields or where generalized candidate SWH (cSWH) was identified. 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 footprint. Information from the Records Review as well as a review of Google Earth imagery (dated June 10, 2025) was also used in making 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 50 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 recommended approach for 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 Species of Conservation Concern (SoCC), Species at Risk (SAR), and Significant Wildlife Habitat (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). Ecological Land

Classification: Southern Ontario (Lee, 2008) was used to describe meadow communities given the descriptions offered more detail to explain habitat in respect to Grassland Birds.

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. 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  $\geq 2.0$  ha<sup>4</sup> (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 species at risk). Site investigations completed for this Project considered wetlands above 0.5 ha for targeted surveys associated with potential SWH. Where no candidate Significant Wildlife Habitat has identified only wetlands  $\geq 2.0$  ha were carried forward to an evaluation of significance. Wetlands  $\geq 2.0$  ha within 50 m of the Project Location will be treated as significant and assessed in the Environmental Impact Study (EIS) following the procedures in Appendix C of the Natural Heritage Assessment Guide (NHAG) (MNR, 2012).

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 wetland were documented. Wetlands were classified based on the dominant vegetation form. Photographs of all wetlands identified were also taken. All wetland units regardless of size were considered for targeted studies associated with wildlife habitat. Corrections to the Records Review will only apply to wetlands  $\geq 2.0$  ha.

<sup>4</sup> 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. In this case, the procedures for assessing the wetland are found in Appendix C (Wetland Characteristics and Ecological Functions Assessment for Renewable Energy Projects) of the NHAG (MNR, 2012).

### 3.2.2.3 *Wildlife Habitat*

An assessment of wildlife habitat was completed following the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015). 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., habitat use studies required) or generalized cSWH (i.e., should be generally mitigated for where potential exists). While habitat use studies are required for cSWH in the Project Location, Appendix D of the NHAG provides additional guidance for habitat use studies within 50 m (or 120 m) of an associated Project Location component. Accordingly, based on the requirements for solar projects, habitat use studies are required for any of the following habitat types found within 50 m of the Project Location:

- Colonially – Nesting Bird Breeding Habitat (Ground) – Terns.
- Colonially – Nesting Bird Breeding Habitat (Trees and Shrubs) – Herons.
- Reptile Hibernaculum.
- SoCC.
- Amphibian Movement Corridors.

To assist in the identification of cSWH and generalized 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, 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).

#### 3.2.3.1 *Anuran Call Surveys*

Anuran Call Surveys were conducted in accordance with the Marsh Monitoring Program (MMP) (Bird Studies Canada, 2000). Each amphibian survey station is to be visited a minimum of 3 nights, approximately 15 days apart, between May 1 and July 15. 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. In total, five amphibian surveys stations were completed on the dates presented in Table 3-2.

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.

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). Amphibian surveyors are asked to conduct their survey visits on one of the first evenings (after mid-March) with appropriate temperatures.

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, & 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). Ecological Land Classification (ELC) is used to determine presence of mixedwood 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).

- Within the highest density of snags/cavity trees (i.e., clusters of snags).
- Species that provide good cavity characteristics/habitat (i.e., white pine, maple, aspen, ash, oak).
- Canopy is more open than cluttered or densely vegetated.
- Exhibits early stages of decay (decay Class 1-3).

In addition to snag surveys, 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 occurred from sunset to sunrise during the month of June. A biologist experienced in bat acoustic analysis and identification undertook the analysis of the data, as required by the MECP.

### 3.2.3.3 *Breeding Bird Surveys*

Breeding Bird Surveys (BBS) were conducted following the OBBA methodology (Ontario Breeding Bird Atlas, 2021). All surveys were conducted between sunrise and 5 hours after sunrise, within a 150 m circular station, with the surveyor identifying all birds by sight and/or sound. A total of nine BBS stations were surveyed twice across the Project Location (Figure 3-1) during late June and again in early July.

The OBBA 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.
- 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. 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 Project used the below to inform survey locations:

- Eastern Meadowlark were listed as 'Threatened' on the SARO List on January 13, 2012. 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 the SARO List on September 28, 2010. 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.
  - ◆ MEFM4: Fresh – Moist Forb Meadow Ecosite, Open Graminoid Meadow Type.

Surveys were conducted in the 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 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 3 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. Maps 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.

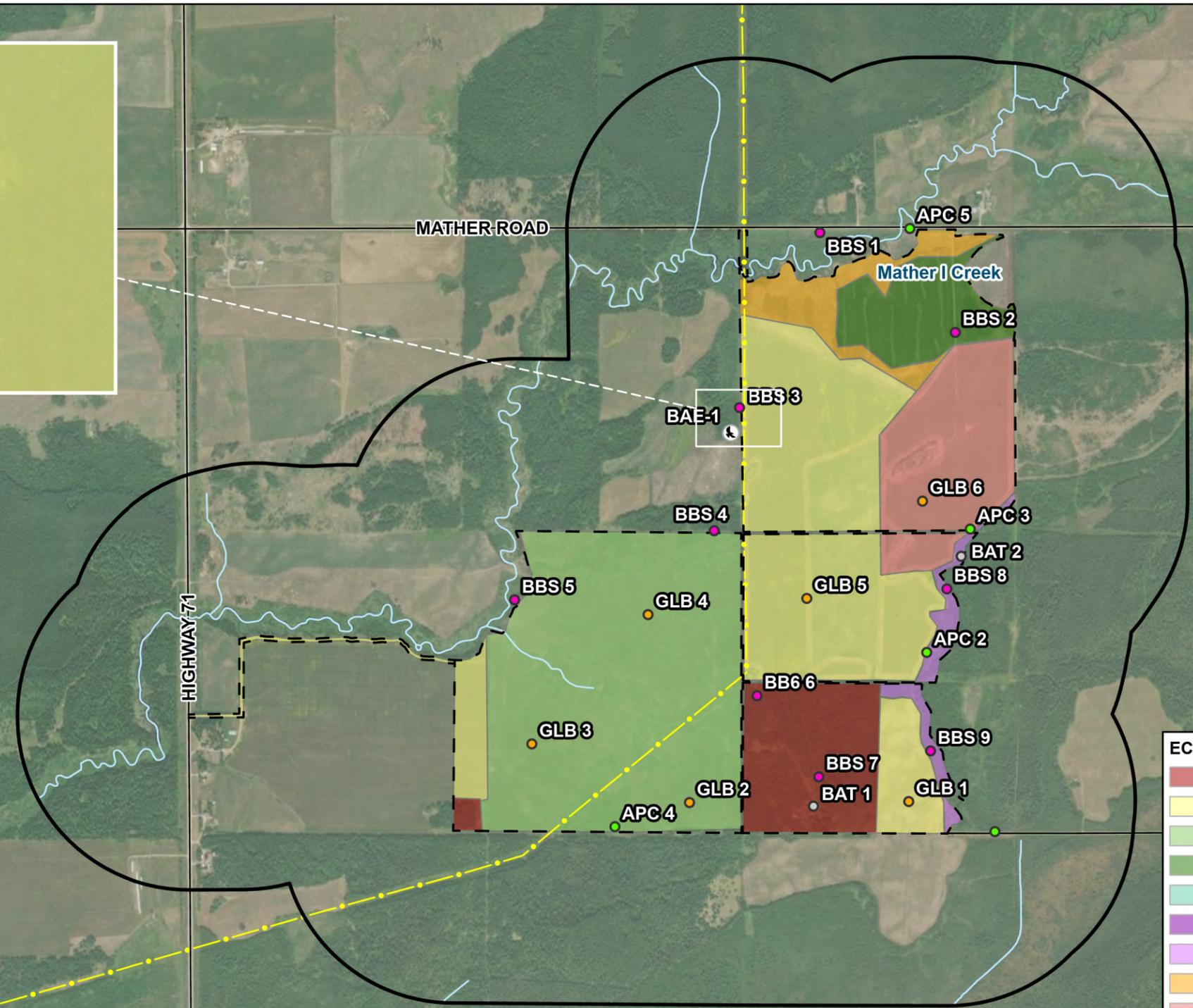
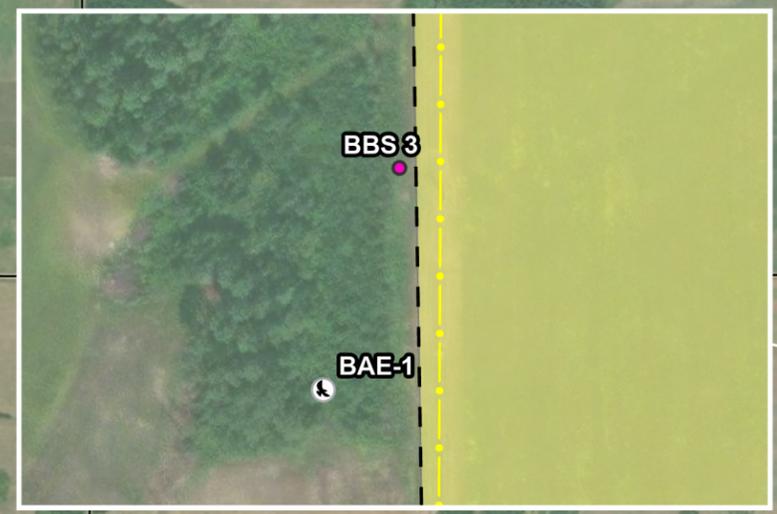
#### 3.3.1 Site Investigation Details

The details of the site investigation related to the dates, times and weather conditions are provided in Table 3-2 below 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 Emo, 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 (hrs)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
May 26, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	20:55	21:55	1	5	0	9	0
May 30, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	7:02	8:30	1.5	18	1	50	0
June 3, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	21:00	22:30	1.5	16	1	10	0
June 4, 2025	Physical Site Investigation (Project Location)	C. Lewis, A. Nerino	8:00	10:30	2.5	17	2	10	0

Date	Survey Type	Site Investigator	Start Time (24 hr)	End Time (24 hr)	Duration (hrs)	Weather Conditions			
						Temp (°C)	Wind Speed (Beaufort Scale)	Cloud Cover (%)	Precipitation (mm)
June 23, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	21:50	23:15	1.25	16	1	50	0
June 24, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:00	10:15	3.25	19	1	0	0
July 8, 2025	Physical Site Investigation (Project Location) Alternative Site Investigation (50 m of Project Location)	T. Simpanen, A. Nerino	7:15	13:30	6.25	17	0	60	0



**ECOLOGICAL LAND CLASSIFICATION**

	Dry, Sandy: Aspen - Birch Hardwood (B040Tt)
	Dry-Fresh Graminoid Meadow Ecosite (MEGM3)
	Dry-Fresh Graminoid Tallgrass Prairie Ecosite (MEGM1)
	Fresh-Moist Graminoid Meadow Ecosite (MEGM4)
	Graminoid Mineral Meadow Marsh Ecosite (MAMM1)
	Mineral Thicket Swamp (B135S)
	Moist, Coarse: Shrub (B063S)
	Open Pasture (OAGM4)
	Perennial Cover Crops (OAGM2)
	Shallow Marsh (MAS)



**LEGEND**

	Bald Eagle Nest		Road
	Amphibian Point Count		Transmission Line
	Bat Monitor		Watercourse
	Breeding Bird Survey		Project Location
	Grassland Bird Survey		Study Area (500m Buffer)

**NOTES:**  
 1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario  
 2. Spatial referencing: NAD 1983 UTM Zone 15N



**PROJECT:** CarbonFree Rainy River Project – Natural Heritage Assessment

**FIGURE TITLE:** Site Investigation Results

**CLIENT:** CarbonFree Rainy River LTD

<b>DWG BY:</b> V. BAXTER	<b>CHK BY:</b> C. SEHL	<b>FIG NO.:</b> 3-1	<b>REV NO.:</b> 1	
<b>DATE:</b> 09/01/26	<b>PAGE:</b> 1			

### 3.3.2 Breeding Bird Survey Results

Surveys were conducted during the breeding season (May 24 to July 10), and took place on June 24 and July 8, 2025 in order to capture breeding evidence and species composition for birds utilizing the Project Location. As depicted in Figure 3-1, a total of nine 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 37 species were detected during the survey period, including an incidental observation of an adult grouse.

Although species such as Savannah Sparrow (*Passerculus sandwichensis*) was detected throughout the Project Location, 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.

In addition to species detected during standardized BBS point counts, an incidental observation of five Ruffed Grouse (*Bonasa umbellus*) is included in Table 3-3 below.

**Table 3-3: Breeding Bird Survey Results**

Common Name	Scientific Name	SARA	SARO
American Crow	<i>Corvus brachyrhynchos</i>	-	-
American Goldfinch	<i>Spinus tristis</i>	-	-
American Robin	<i>Turdus migratorius</i>	-	-
Bald Eagle	<i>Haliaeetus leucocephalus</i>	-	SC
Black-and-white Warbler	<i>Mniotilta varia</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>	-	-
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	-	-
Broad-winged Hawk	<i>Buteo platypterus</i>	-	-
Brown-headed Cowbird	<i>Molothrus ater</i>	-	-
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	-	-
Common Yellowthroat	<i>Geothlypis trichas</i>	-	-
Clay-coloured Sparrow	<i>Spizella pallida</i>	-	-
Gray Catbird	<i>Dumetella carolinensis</i>	-	-
Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-
House Wren	<i>Troglodytes aedon</i>	-	-
Killdeer	<i>Charadrius vociferus</i>	-	-
Mourning Warbler	<i>Geothlypis philadelphia</i>	-	-
Nashville Warbler	<i>Leiostyris alpestris</i>	-	-
Northern Flicker	<i>Colaptes auratus</i>	-	-

Common Name	Scientific Name	SARA	SARO
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>	-	-
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-
Savannah Sparrow	<i>Passerculus sandwichensis</i>	-	-
Sedge Wren	<i>Cistothorus stellaris</i>	-	-
Song Sparrow	<i>Melospiza melodia</i>	-	-
Veery	<i>Catharus fuscescens</i>	-	-
Western Meadowlark	<i>Sturnella neglecta</i>	NAR	-
White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-
Winter Wren	<i>Troglodytes hiemalis</i>	-	-
Yellow Warbler	<i>Setophaga petechia</i>	-	-
<b>Incidental</b>			
Ruffed Grouse	<i>Bonasa umbellus</i>	-	-

### 3.3.3 Grassland Bird Survey Results

Surveys were conducted as outlined Table 3-4 below during May and June 2025 to capture various potential grassland bird species within the Project Location. A total of six survey locations were placed in areas thought to provide suitable habitat. All six stations were surveyed three times during the survey window (May 15 to July 3); with one target species recorded.

**Table 3-4: Grassland Bird Survey Results Summary**

Date	Site Investigator(s)	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
<b>Survey 1</b>							
May 30, 2025	C. Lewis, A. Nerino	1	No target grassland bird species observed.	8:20	18	15	0
		2	No target grassland bird species observed.	7:02	15	15	0
		3	No target grassland bird species observed.	7:16	15	15	0
		4	No target grassland bird species observed.	7:30	16	15	0

Date	Site Investigator(s)	Point	Observations	Time (24 hr)	Temp (°C)	Wind Speed (km/h)	Precipitation (mm)
		5	Bobolink observed flying throughout area.	7:40	18	15	0
		6	Bobolink heard/observed flying throughout area.	7:55	18	15	0
<b>Survey 2</b>							
June 4, 2025	C. Lewis, A. Nerino	1	No target grassland bird species observed.	9:15	17	19	0
		2	No target grassland bird species observed.	8:08	15	19	0
		3	No target grassland bird species observed.	8:30	15	19	0
		4	No target grassland bird species observed.	8:38	15	19	0
		5	Several Bobolink heard/observed flying throughout area.	8:50	17	19	0
		6	Several Bobolink heard, no visual confirmation.	8:55	15	19	0
<b>Survey 3</b>							
June 24, 2025	T. Simpanen, A. Nerino	1	Bobolink observed flying overhead.	7:36	13	10	0
		2	No target grassland bird species observed.	8:08	13	10	0
		3	Bobolink heard calling.	8:28	13	10	0
		4	Bobolink observed.	8:52	13	10	0
		5	Several male and female Bobolink heard/observed.	9:01	15	10	0

### 3.3.4 Anuran Call Survey Results

Surveys were conducted as outlined in Table 3-5 below during May and June 2025 to capture various potential breeding amphibian species within the Project Location. As depicted in Figure 3-1, a total of five survey locations were placed in areas thought to provide suitable habitat. All five stations were surveyed on three occasions during the survey window (April 15 to June 30); with two species recorded.

**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)
<b>Survey 1</b>										
May 26, 2025	C. Lewis, A. Nerino	1	Spring Peeper	3	21:25	21:28	14	0	90	0
		2	Spring Peeper	1	21:10	21:13	14	0	90	0
		3	Spring Peeper	1	21:05	21:08	14	0	90	0
		5	Spring Peeper	2	20:55	20:58	14	0	80	0
<b>Survey 2</b>										
June 3, 2025	C. Lewis, A. Nerino	1	Spring Peeper	2	22:15	22:18	16	1	5	0
		2	None detected	N/A	22:00	22:03	16	1	10	0
		3	Spring Peeper	1	21:50	21:53	16	1	10	0
		4	Spring Peeper	2	21:20	21:23	16	1	10	0
		5	Spring Peeper	3	22:30	22:33	16	1	5	0
<b>Survey 3</b>										
June 23, 2025	T. Simpanen, A. Nerino	1	Spring Peeper	3	22:20	22:23	16	1	50	0
			Gray Treefrog	1	22:20	22:23	16	0	50	0
		2	Spring Peeper	2	22:30	22:33	16	0	50	0
		4	Spring Peeper	2	22:10	22:13	16	0	50	0
			Gray Treefrog	2	22:10	22:13	16	0	50	0
		5	Spring Peeper	3	21:50	21:53	16	0	50	0

### 3.3.5 **Bat Maternity Roost and Monitoring Results**

A limited number of suitable snags were identified within the Project Location. 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 as shown in Figure 3-1. Table 3-6 below outlines the results of the acoustic monitoring conducted from June 3 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	ESA Status	Unit 1	Unit 2	Total All Units (Combined)
Big Brown Bat	<i>Eptesicus fuscus</i>	-	24	26	50
Hoary Bat	<i>Lasiurus cinereus</i>	END	102	34	136
Little Brown Myotis	<i>Myotis lucifugus</i>	END	1	1	2
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	END	81	107	188
Unknown (NoID)	N/A	N/A	73	19	92
<b>Total Counts (All Species)</b>			<b>281</b>	<b>187</b>	<b>468</b>

A total of four bat species were detected during the monitoring period. ‘Unknown’ are recordings that could not be attributed or narrowed down to the species level as call structure was weak or did not have enough call notes to confirm down to the species level but are distinct from noise files and are within the ultrasonic bat call range. Majority of the bat activity was attributed to Hoary Bat (at Bat 1), and Silver-haired Bat (at Bat 2). During the monitoring period, activity was captured and a higher number of bat passes were recorded during the end of the month, specifically on June 22 and June 28 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 to be 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 purposes. ELC was carried out during the appropriate growing season, on June 24 and July 8, 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 display 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.

Relatively few wetlands are contained within the Project Location, as seen in Figure 3-2. Wetlands 4 and 5 as identified in the Records Review results were determined to be absent based on the results of field investigations as described in Section 3.2.2.2.

The Project Location is a predominantly open grassland bordered by hedgerows, forest and riparian habitats.

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

ELC Community	ELC Code	On Project Location/ Component	Within 50 m of Project Location/ Component	Community Description
Dry-Fresh Graminoid Meadow Ecosite	MEGM3	√		Open meadow habitat dominated by forbs and grasses.
Dry-Fresh Graminoid Tallgrass Prairie Ecosite	MEGM1	√		Open pasture/tallgrass habitat dominated by grasses, sparse shrubs sparsely littered throughout this habitat. Short grass patches present from cattle or disturbance.
Dry, Sandy: Aspen – Birch Hardwood	B040Tt	√	√ Adjacent to Project Location	Dominated by Trembling Aspen ( <i>Populus tremuloides</i> ), relatively young age class.
Sparse Treed Fen	B126T1	√	√ Adjacent to Project Location	Peatlands with deep organic deposits (>40 cm) and are influenced by slow, lateral water movement. Fens can be treed, shrubby, or open. Sparsely vegetated and stunted (>10 cm) Tamarack ( <i>Larix laricina</i> ) and Black spruce ( <i>Picea mariana</i> ), some shrubs and sedges present.
Perennial Cover Crops	OAGM2	√		Disturbed soil primarily dominated by Lamb's quarters ( <i>Chenopodium album L.</i> ).
Shallow Marsh	MAS	√	√ Adjacent to Project Location	Portion of habitat contains open slow flowing water within varying width of creek bank. Riparian vegetation dominated by Willow ( <i>Salix Spp.</i> ) and Speckled Alder ( <i>Alnus incana</i> ).
Moist, Coarse: Shrub	B063S	√	√ Adjacent to Project Location	This is contained within the PSW that overlaps with the Project Location. Primarily vegetated by a thick canopy of Speckled Alder.
Graminoid Mineral Meadow Marsh Ecosite	MAMM1	√	√ Adjacent to Project Location	Shallow meadow marsh habitat dominated by sedges, Woolgrass ( <i>Scirpus cyperinus</i> ), Broadleaf cattail ( <i>Typha latifolia</i> ).
Open Pasture	OAGM4	√		Open landscape with shortened grass from cattle grazing and movement.
Mineral Thicket Swamp	B135S	√		Speckled Alder dominant thicket, notable sedge and facultative wet plant indicator species present.

**3.3.7 Confirmation and Assessment of Natural Features**

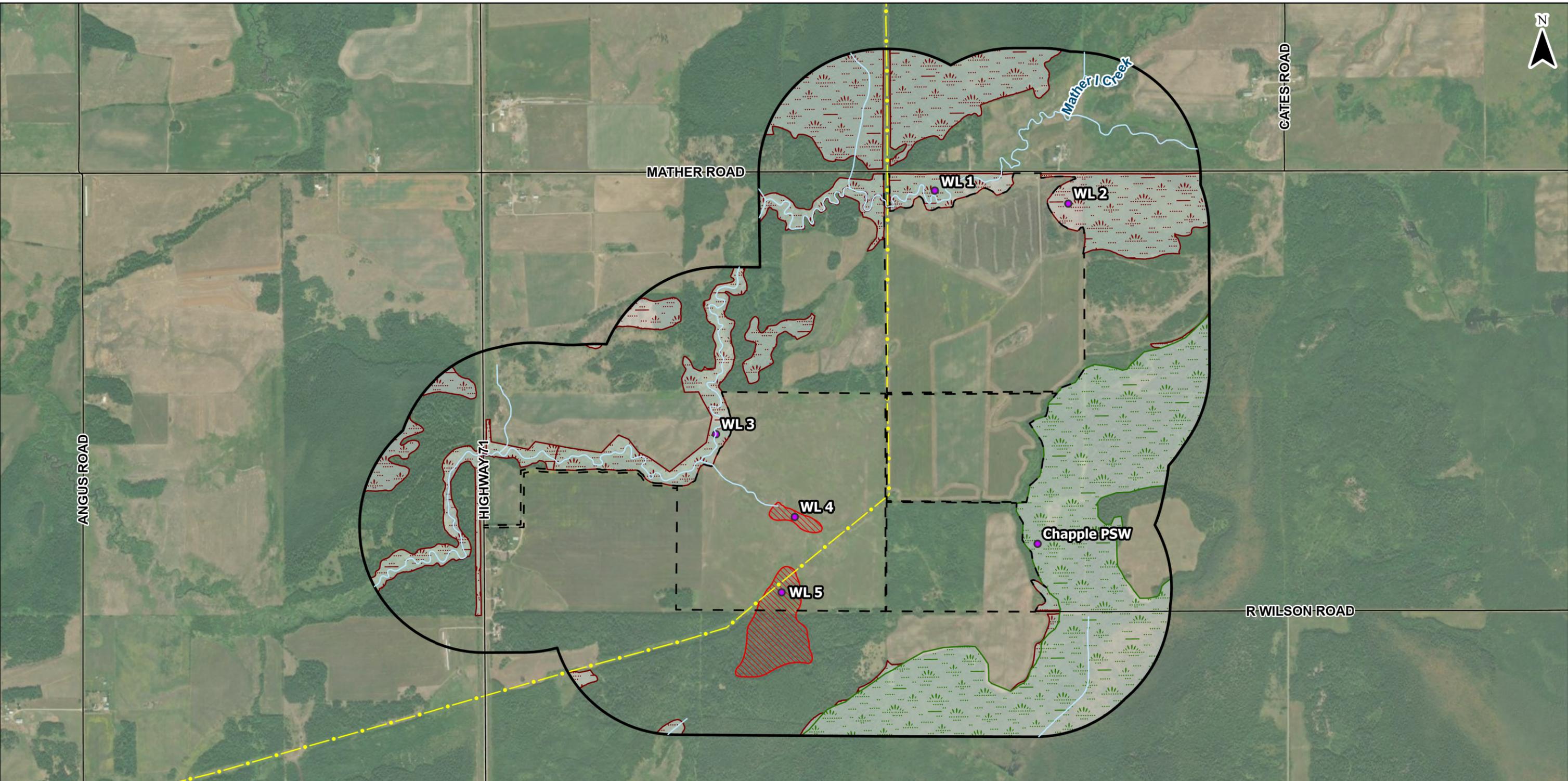
The following sections include the natural features to be assessed as part of the Natural Heritage Assessment (NHA). Confirmation of the Records Review (Section 2) findings and any additional natural features discovered during the site investigation are discussed in the following sections.

**3.3.7.1 Wetlands**

The Records Review identified six wetlands in or within 50 m of the Project Location, four of which were confirmed during the site investigation. Wetlands 1 and 3 in Figure 3-2 are associated with Mather I Creek and have been characterized as marsh wetlands. Wetland 2 is isolated and characterized as a marsh wetland. The Chapple PSW is confirmed present to the east of the site and has previously been characterized primarily as a swamp.

Wetland 4 and Wetland 5 as identified in the Records Review are associated with the Chapple Official Plan. These wetlands were confirmed to be absent during the site investigation, with signs of active grazing and farming throughout the area and limited signs of wetland vegetation species in the area. As these features were confirmed to be absent through the site investigation they will not be carried forward to the EoS or EIS.

Figure 3-2 summarizes the results of the Site Investigation wetland delineation activities.



**LEGEND**

- Wetland
- Road
- Transmission Line
- Watercourse
- Project Location
- Study Area (500m Buffer)
- Unevaluated Wetland (MNR)
- Provincially Significant Wetland (MNR)
- Wetland No Longer Present

**NOTES:**

1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario
2. Spatial referencing: NAD 1983 UTM Zone 15N
3. Chapple Official Plan Wetlands digitized from the Township of Chapple's Final Official Plan, 2013



**PROJECT:** CarbonFree Rainy River Project – Natural Heritage Assessment

**FIGURE TITLE:** Site Investigation Confirmed Wetlands

**CLIENT:** CarbonFree Rainy River LTD

<b>DWG BY:</b> V. BAXTER	<b>CHK BY:</b> C. SEHL	<b>FIG NO.:</b> 3-2	<b>REV NO.:</b> 1	
<b>DATE:</b> 09/01/26	<b>PAGE:</b> 1			

### 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 did not identify any specific wildlife habitat types or confirmed Significant Wildlife Habitat (SWH) on or within 50 m of the Project Location. However, based on a review of satellite imagery, it was determined that potential wildlife habitat (as defined in the REA Regulation) may be present on and within 50 m of the Project Location.

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.
  - ◆ Important to a migratory or non-migratory species.

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

All wildlife habitats identified in the Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015) 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) describe 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.
- 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) was used to determine the presence/absence and evaluate the significance of seasonal concentration areas within the Project Location. 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 of Animals**

SEASONAL CONCENTRATION AREAS OF ANIMALS								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
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	<u>B060-062</u> <u>B077-079</u> <u>B093-095</u> <u>B109-111</u>  Plus, evidence of annual spring flooding from meltwater or run-off within these Ecosites.	<ul style="list-style-type: none"> <li>Fields with sheet water during Spring (mid-March to May).</li> <li>Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>Flood plains (flooded river banks).</li> <li>Cultivated fields with waste grains are commonly used by waterfowl, these are not considered SWH.</li> </ul>	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	<u>Shallow Marsh</u> – MAS1, MAS2, MAS3  <u>Shallow Water</u> – SAS1, SAM1, SAF1  <u>Swamp</u> – SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	<ul style="list-style-type: none"> <li>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.</li> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water).</li> </ul>	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
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	B005-006 B160-162 B170-172 B176-178 B186-188 B204 B207	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>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.</li> <li>Sewage treatment ponds and stormwater ponds do not qualify as a SWH.</li> </ul>	There are no beaches, beach bars, sand dunes 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

SEASONAL CONCENTRATION AREAS OF ANIMALS								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Bat Hibernacula	Big Brown Bat, Tri-coloured Bat	<u>B158-159</u> <u>B164-165</u> <u>B174-175</u> <u>B180-181</u>  Caves and mine shafts are the important features.	<ul style="list-style-type: none"> <li>Hibernacula may be found in abandoned caves, mine shafts, underground foundations and karsts.</li> <li>Active mine sites should not be considered as SWH.</li> <li>The locations of bat hibernacula are relatively poorly known.</li> <li>Buildings are not considered to be SWH.</li> </ul>	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 Colonies	Big Brown Bat, Silver-haired Bat	Maternity colonies considered SWH are found in treed Ecosites. B015-109 B023-028 B039-043 B054-059 B069-076 B87-092 B103-108 B118-125  Aspen is an important feature in Ecoregion 3E, primarily the presence of larger diameter trees in older mixed-wood stands.	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario.</li> <li>Maternity colonies located in Mature (dominant trees &gt;80 yrs old) deciduous or mixed forest stands with &gt;10 ha large diameter (&gt;25 cm dbh) wildlife trees.</li> <li>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.</li> <li>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.</li> </ul>	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 Bat 2	Y (generalized c)
Turtle Wintering Areas	Midland Painted Turtle <u>Special Concern:</u> Snapping Turtle	<u>Marsh</u> – MA  B128-142 B145-152	<ul style="list-style-type: none"> <li>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.</li> <li>Over-wintering sites are permanent waterbodies, large wetlands, and bogs or fens with adequate dissolved oxygen.</li> <li>Year-round persistence of standing or flowing water to depth, or presence of springs to prevent freezing is key.</li> <li>Man-made ponds such as sewage lagoons or stormwater ponds should not be considered SWH.</li> </ul>	There are four wetlands that interact with the Project Location, of which, one has open water components (Mather I Creek); however, this channel is narrow and highly vegetated. The depth of the creek is considered shallow and would be subject to freezing during the overwintering period which would not be considered suitable for turtles. Therefore, this feature is considered not present.	N	N	N/A	N

SEASONAL CONCENTRATION AREAS OF ANIMALS								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Reptile Hibernacula	Eastern Gartersnake, Smooth Green Snake, Northern Ringneck Snake, 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 B128-139 B158-159 B164-165 B167-172 B174-175 B180-181 B183-188	<ul style="list-style-type: none"> <li>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations.</li> <li>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.</li> <li>Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line.</li> <li>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.</li> </ul>	There are woodlands in and within 50 m of the Project Location; however, they do not provide suitable hibernacula habitat for snakes due to the lack of rock crevices, burrows and rocky outcrops. Therefore, this feature is considered not present.	N	N	N/A	N
Colonially – Nesting Bird Breeding Habitat (Cliff)	Cliff Swallow	Cliff faces, bridge abutments, silos, barns (Cliff Swallows).  Habitat found but not limited to the following ecosites: B001-004 B157-159 B173-175	<ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul>	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	N

SEASONAL CONCENTRATION AREAS OF ANIMALS								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Colonially – Nesting Bird Breeding Habitat (Trees/Shrubs)	Great Blue Heron, Bonaparte's Gull, Double-crested Cormorant	<p>May include a wide variety of tall treed ecosites. Habitat selection based on close proximity to water body or on island:</p> <p>B045-059 B064-076 B081-092 B097-108 B113-137 B161-162 B177-178</p>	<ul style="list-style-type: none"> <li>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.</li> <li>Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> <li>Bonaparte's Gulls nest in coniferous trees (preferably spruce-fir) near fens, bogs, swamps, ponds or lakes.</li> <li>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.</li> </ul>	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.	N	N	N/A	N
Colonially – Nesting Bird Breeding Habitat (Ground)	Herring Gull, Ring-billed Gull, Common Tern, Double-crested Cormorant, Brewer's Blackbird	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river.</p> <p>B160-165 B169-172 B176-181 B185-188</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird).</p> <p>B008 B020-021 B030-031 B045-046 B061-062 B078-079 B094-095 B110-111 B142-144</p> <p><u>Meadow Marsh</u> – MAM1-6 <u>Shallow Marsh</u> – MAS1-3 <u>Cultural Meadow</u> – CUM</p>	<ul style="list-style-type: none"> <li>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.</li> <li>Brewer's Blackbird colonies are found loosely on the ground in or in low bushes near streams and irrigation ditches within farmlands.</li> <li>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.</li> </ul>	There is no habitat potential for gulls and terns. While the criteria suggests that potential habitat for Brewer's Blackbird, presence of farmlands and agricultural features such as fields and open areas indicate presence of this feature. A pair was identified during BBS counts during 2025.	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 or find alternative habitats.
- Areas that contain a vegetation community that is rare within the planning area.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) 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 is provided in Table 3-9 below.

Table 3-9: cSWH Assessment for Rare Vegetation Communities

RARE VEGETATION COMMUNITIES								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Cliffs and Talus Slopes	N/A	Uncommon to rare in Ecoregion 3E.  <u>Cliffs:</u> B157-159, B173-175, B201-203 <u>Talus:</u> B166-168, B182-184	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.  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.	There are no cliffs or talus slopes on or within 50 m of the Project Location.	N	N	N/A	N
Rock Barren	N/A	<u>Calcareous Rock Barren:</u> B179, B180, B181 <u>Precambrian Rock Barren:</u> B163, B164, 164	Exposed bedrock areas (mostly exposed rock with <5 cm mineral or <10 cm 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 (American Dune Grass Type)	N/A	B005, B006, B142	Exposed mineral material community often associated with shorelines of lakes or exposed inland mineral material that has been shaped by eolian (wind) processes.	There are no sand dunes on or within 50 m of the Project Location.	N	N	N/A	N
Great Lakes Arctic-Alpine Shoreline Type	N/A	B161, B162	Found on the shoreline of Lake Superior on open basic bedrock. Vegetation consist mostly of arctic-alpine species.	There are no arctic-alpine shoreline habitats on or within 50 m of the Project Location.	N	N	N/A	N
Hardwood Swamps	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 swamp habitats noted on and within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Red and White Pine Stands	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. They occur as sporadic, small stands and are generally found on dry, often exposed, and rocky sites. However, these conditions can vary.	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	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.	There are no Black Ash on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Elm	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.	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.	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 (cSWH) 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	
Rare Treed Type: 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.	No Red or Sugar maple stands on or within 50 m of the Project Location.	N	N	N/A	N
Rare Treed Type: Yellow Birch	Yellow Birch	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	N/A	<p><u>S1 – Extremely rare</u> – usually 5 or fewer occurrences in the province, or very few remaining hectares.</p> <p><u>S2 – Very rare</u> – usually between 5 and 20 occurrences in the province, or few remaining hectares.</p> <p><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.</p>	<p>ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in Appendix M.</p> <p>The OMNR/NHIC will have up-to-date listing for rare vegetation communities.</p>	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

### 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.
- Areas that provide habitat that greatly enhances 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 below.

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

SPECIALIZED HABITAT FOR WILDLIFE								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
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	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>Meadow Marsh</u> – MAM1, MAM2, MAM3, MAM4, MAM5, MAM6 <b>Note:</b> 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. <ul style="list-style-type: none"><li>Upland areas should be at least 120 m wide so that predators such as raccoons, skunks, and foxes have difficulty finding nests.</li><li>Wood Ducks, Bufflehead, Common Goldeneye, and Hooded Mergansers utilize large diameter trees (&gt;40 cm dbh) in woodlands for cavity nest sites.</li></ul>	There are no wetlands in or within 50 m of the Project Location. Therefore, this habitat type is considered not present.	N	N	N/A	N
Bald Eagle and Osprey Nesting	Osprey  <u>Special Concern Species:</u> Bald Eagle	Treed communities directly adjacent to riparian areas – rivers, lakes, ponds and wetlands.	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. <ul style="list-style-type: none"><li>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.</li><li>Nests located on man-made objects are not to be included as SWH (e.g., telephone poles and constructed nesting platforms).</li></ul>	There are 4 deciduous woodlands on and within 50 m of the Project Location. One Bald Eagle nest was observed during 2025 studies. However, the nest is located adjacent to the Project Location. No Osprey nests were observed within 50 m of the Project Location during the time of the site investigations.	N	Y	BAE-1	Y
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)	May be found in all forested ELC Ecosites.	All natural or conifer plantation woodland/forest stands. <ul style="list-style-type: none"><li>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.</li><li>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.</li><li>Nest sites may be used again, or a new nest may be in close proximity to an old nest.</li></ul>	There are deciduous woodlands in and within 50 m of the Project Location. The woodland and do not meet the size criteria for consideration of cSWH and there is no interior forest habitat present. This habitat type is considered to be not present.	N	N	N/A	N

SPECIALIZED HABITAT FOR WILDLIFE								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Turtle Nesting Areas	Midland Painted Turtle  <u>Special Concern Species:</u> Snapping Turtle	B003, B006-007, B031, B171-172, B187-188	<ul style="list-style-type: none"> <li>Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals.</li> <li>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.</li> <li>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> <li>These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</li> </ul>	The wetlands in and within 50 m of the Project Location do not provide sand or gravel substrates suitable for turtle nesting and are closed canopy with little to no sun exposure. Roadsides on the northern portion of the Project Location do not provide SWH for nesting turtle populations. Therefore, 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.	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.	<p>Any forested area (with &lt;25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.</li> </ul>	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	Habitat may be found in all forested ecosites adjacent to water.	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>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.</li> <li>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.</li> </ul>	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
Mineral Licks	Moose, Porcupine	Habitat may be found in all treed ecosites.	<ul style="list-style-type: none"> <li>Mineral licks are a valuable habitat component but are also very rare on the landscape.</li> <li>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.</li> </ul>	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

SPECIALIZED HABITAT FOR WILDLIFE								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
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	Habitat may be found in all treed ecosites.	<ul style="list-style-type: none"> <li>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.</li> <li>Otters prefer undisturbed shorelines along waterbodies 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.</li> <li>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.</li> <li>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.</li> <li>Lynx dens are most often associated with the presence of downed woody debris.</li> <li>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.</li> </ul>	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
Rendezvous Sites	Gray Wolf  <u>Special Concern:</u> Eastern Wolf	Isolated open areas including bogs, fens, other wetlands, meadows, clearcuts.	<ul style="list-style-type: none"> <li>Rendezvous sites may be found in a variety of habitats such as open bogs, burns, clearcuts, beaver meadows, and open forest.</li> <li>Rendezvous sites are often used by wolf packs during multiple years.</li> <li>Areas used as rendezvous sites one year may be used as den sites in a subsequent year.</li> <li>Wolves appear to have a low tolerance for human activity near rendezvous sites.</li> </ul>	Rendezvous Sites were not documented within the site and the surrounding area is considered disturbed with active land management, cattle, and farm activities, in conjunction with minimal forest cover for this species to travel between sites. Therefore, this feature is considered not present.	N	N	N/A	N

SPECIALIZED HABITAT FOR WILDLIFE								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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 Breeding Habitat (Woodland)	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Four-toed Salamander, Spring Peeper, Wood Frog, American Toad	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.	<ul style="list-style-type: none"> <li>Presence of a wetland, lake or pond (including vernal pools) &gt;500 m<sup>2</sup> (about 25 m diameter) 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.</li> <li>Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.</li> <li>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.</li> </ul>	No vernal pools were observed on-site within the woodlands that intersect the Project Location. Few woodlands occur within the Project boundaries and are not thought to provide sufficient breeding habitat for amphibians. Therefore, this feature is considered not present.	N	N	N/A	N
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	Rich swamps and thickets, vernal/seasonal pooling, riparian and variety of wetland interiors and margins.  B128-135, B141-152, B223-224	<ul style="list-style-type: none"> <li>Wetlands and pools (including vernal pools) &gt;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.</li> <li>Wetlands and pools need to persist until mid-July.</li> <li>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.</li> <li>Typically, these wetland ecosites will be isolated (&gt;120 m) from woodland ecosites; however, larger wetlands containing predominantly aquatic species (e.g., Green Frog) may be adjacent to woodlands.</li> </ul>	Wetlands present in and within 50 m of the Project Location that was confirmed to provide amphibian breeding habitat, as captured during APC surveys in 2025.	Y	Y	(APC 1 to 5)	Y
Mast Producing Areas	Black Bear, White-tailed Deer, Ruffed Grouse	All shrub and treed ecosites capable of producing mast.	<ul style="list-style-type: none"> <li>Mast is a very important food requirement for many wildlife species.</li> <li>Significant tree species include mountain ash and pin cherry. Significant shrub species include blueberries, raspberries, beaked hazel, and choke cherry.</li> <li>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.</li> <li>Recently disturbed sites (fire or logging), large bedrock outcroppings, forest openings or utility corridors &gt;1 ha provide excellent sites for mast producing shrubs.</li> <li>Permanent open sites providing long-term food sources are more significant.</li> </ul>	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

SPECIALIZED HABITAT FOR WILDLIFE								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Sharp-tailed Grouse Leks	Sharp-tailed Grouse	B029-031, B044-046, B060-062, B077-079, B093-095, B109-111, B126, B136-141	<ul style="list-style-type: none"> <li>Leks are an important habitat feature required to maintain populations of sharp-tailed grouse.</li> <li>The lek or dancing ground consists of bare, grassy area as the core of the lekking area and may contain some sparse shrubland.</li> <li>There is often a knoll or slightly elevated rise in topography associated with the site. This is a better drained site that is less likely to collect water.</li> <li>Leks are typically a grassy field/meadow separated by &gt;15 ha from adjacent shrublands and &gt;30 ha from adjacent treed areas.</li> <li>Field/meadows are to be &gt;15 ha when adjacent to shrubland and &gt;30 ha when adjacent to deciduous stands.</li> <li>Field/meadows are to be as undisturbed as possible with low intensities of agriculture (light grazing or late haying).</li> <li>Leks will be used annually if not destroyed by cultivation or invasion of woody plants or tree planting.</li> </ul>	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.	N	N	N/A	N

### 3.3.7.2.4 Habitat for Species of Conservation Concern (not including Endangered or Threatened Species)

The NHRM (MNR, 2010) defines habitats of SoCC as:

- Wildlife species that are listed as Special Concern or rare, that are declining or are featured species.
- Habitat for Species of Conservation Concern does not include habitats of Endangered or Threatened Species as identified by the ESA 2007.
- Species that are designated at the national level as endangered or threatened by COSEWIC, which are not protected in regulation under the ESA.
- The Significant Wildlife Habitat Support Guide (SWHTG) (MNR, 2000) defines rare or significant species at six levels: globally significant; nationally significant; provincially significant; regionally significant; locally significant (within a Site District); significant within a planning authority's jurisdiction. The levels of rarity are defined in Section 1-1.

SoCC does not include Provincially or Federally designated species listed as Endangered or Threatened and protected in regulation under the ESA or Schedule 1 of SARA. Those species are identified as "Species at Risk" and will be discussed separately.

A list of SoCC that have been recorded within the Project Location is provided in Appendix A. The habitat guide and criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) was 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 guide associated with this category is provided in Table 3-11 below.

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

HABITAT FOR SPECIES OF CONSERVATION CONCERN								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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	
Marsh Breeding Bird Habitat	American Bittern, Sora, Red-necked Grebe, Pied-billed Grebe, Ring-necked Duck, Lesser Scaup, Ruddy Duck, American Coot, Sandhill Crane, Virginia Rail, Trumpeter Swan  <u>Special Concern:</u> Black Tern, Yellow Rail	<u>Ecosites:</u> B134-152	<ul style="list-style-type: none"> <li>Nesting occurs in wetlands.</li> <li>All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present.</li> <li>Rich wetlands for these bird species are very productive and rare in Northern Ontario landscapes.</li> </ul>	Wetlands in or within 50 m of the Project Location do not meet the criteria for SWH. Breeding bird surveys did not capture any of the target species. Therefore, this habitat type is considered not present.	N	N	N/A	N
Open Country Bird Breeding Habitat	Vesper Sparrow, Le Conte's Sparrow, Northern Harrier, Savannah Sparrow  <u>Special Concern:</u> Short-eared Owl	<u>All Field, Meadow and Sparse Shrub ecosites:</u> B09-09, B020-021, B029-31, B044-046, B060-062, B077-079, B093-095, B109-111	<ul style="list-style-type: none"> <li>Large field/meadow areas (includes natural and cultural fields and meadows) &gt;30 ha.</li> <li>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).</li> <li>Field/meadow sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older.</li> <li>The Indicator bird species are area sensitive requiring larger field/meadow areas than the common grassland species.</li> </ul>	Meadow communities confirmed breeding presence of Savannah Sparrows only. No additional indicator species for this SWH were documented during the 2025 field investigations. Therefore, this habitat type is considered not present.	N	N	N/A	N
Shrub/Early Successional Bird Breeding Habitat	Clay-coloured Sparrow, Field Sparrow, Ruffed Grouse, Eastern Kingbird, American Woodcock	<u>All sparse shrub and shrub ecosites:</u> B09-010, B021-022, B031-032, B046-047, B062-063, B079-080, B095-096, B111-112, B134-135	<p>This wildlife habitat is declining throughout Ontario and North America.</p> <ul style="list-style-type: none"> <li>Large natural field areas succeeding to shrub and thicket habitats &gt;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 livestock pasturing in the last 5 years).</li> <li>Larger shrub thicket habitats (&gt;30 ha) are most likely to support and sustain a diversity of these species.</li> <li>Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or lightly grazed pasturelands.</li> </ul>	While thicket communities exist within the Project Location, these communities do not meet the size requirements to be considered SWH. Additionally, none of the listed species were documented during site investigations, including targeted Breeding Bird Surveys. 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 (cSWH) 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	
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).	Brewer's Blackbird ( <i>Euphagus cyanocephalus</i> )	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.	Species encountered and documented during Breeding Bird Surveys. Thought to be utilizing the area for foraging.	Y (cSWH)	Y (cSWH)	SoCC-1	Y (generalized cSWH)
	Western Meadowlark ( <i>Sturnella neglecta</i> )	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.	Species encountered and documented during Breeding Bird Surveys and on-site investigations. Thought to be utilizing the area for foraging and possible breeding (not confirmed during BBS surveys).	Y (cSWH)	Y	SoCC-2	Y (generalized cSWH)
	Black-billed Magpie ( <i>Pica hudsonia</i> )	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.	Species encountered and documented during Breeding Bird Surveys and on-site investigations.	Y	Y	SoCC-3	Y (generalized cSWH)
	Barn Swallow ( <i>Hirundo rustica</i> )	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 encountered during site investigations and targeted Breeding Bird Surveys. Although, habitat is present within and adjacent to the Project Location that is suitable for this species life processes.	N	N	N/A	N

### 3.3.7.2.5 Animal Movement Corridors

The NHRM (MNR, 2010) 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.
- Habitats with a key ecological function to enable wildlife to move, with minimum mortality, between areas of significant wildlife habitat or core natural areas.

The criteria outlined in the SWH Ecoregion 3E Criterion Schedule (MNR, 2015) 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 below.

Table 3-12: cSWH Assessment for Animal Movement Corridors

ANIMAL MOVEMENT CORRIDORS								
cSWH Type	Candidate Significant Wildlife Habitat (cSWH) 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 Peeper, 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 Significant Wildlife Habitat Criteria Schedules for Ecoregion 3E (MNR, 2015).	<p>Movement corridors between breeding habitat and summer habitat.</p> <ul style="list-style-type: none"> <li>• Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (MNR, 2015).</li> </ul>	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 was 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.	<ul style="list-style-type: none"> <li>• Movement corridors must be determined when Moose Aquatic Feeding Area and Mineral Lick Habitat are confirmed from Table 1.2.2 (MNR, 2015).</li> <li>• Corridors typically follow riparian areas, woodlots, and areas of physical geography (ravines or ridges).</li> <li>• Corridors will be multi-functional (i.e., these will function for any smaller mammal species as well).</li> </ul>	'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.	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• Den sites of other furbearer species may be more associated with social, hunting, breeding, or other behaviours.</li> <li>• 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.</li> </ul>	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 Wetland 1, Wetland 2 and Wetland 3 as well as the Chapple PSW. Wetlands 4 and 5 were determined to be absent and will not be carried forward to the EOS/EIS. Several SoCC were identified and carried forward to the EoS/EIS for consideration.

### 3.4.2 Generalized Significant Wildlife Habitat

#### 3.4.2.1 Bat Maternity Roost Habitat

Acoustic analysis indicated general usage of the Project Location by bat species. Assumptions can be made regarding the level of activity noted during analysis. It is likely that maternity habitat for Bat species in the Project Location is low or of poor quality. Generally, more activity was captured adjacent to bat acoustic monitoring Unit 2 associated with the Chapple PSW.

#### 3.4.2.2 Bald Eagle and Osprey Nesting Habitat

One Bald Eagle nest was observed on the perimeter of the Project Location. Two adult Bald Eagles were observed during early July, thought to be defending territory and likely utilized the nest during the core breeding season.

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

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
<b>Generalized cSWH</b>				
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Bald Eagle Nest	Within 50 m of Project Location	Stick nest (Bald Eagle) observed and confirmed active during breeding season.	Treated as significant and construction mitigation provided in the EIS.
Maternity Roosting Habitats	Bat 1 and Bat 2	Within Project Location	Considered as generalized SWH. Assessments of snag density outline the area is likely not significant. Acoustic recordings indicated more activity surrounding Unit 2.	Treated as significant and construction mitigation provided in the EIS.
Brewer's Blackbird ( <i>Euphagus cyanocephalus</i> )	SoCC-1	Within Project Location	Observed during study. Considered as generalized SWH.	Treated as significant and construction mitigation provided in the EIS.
Western Meadowlark ( <i>Sturnella neglecta</i> )	SoCC-2	Within Project Location	Observed during study. Considered as generalized SWH.	Treated as significant and construction mitigation provided in the EIS.

Natural Feature	Figure 3-1 ID	Proximity to Project Location	Assessment	Next Steps
Black-billed Magpie ( <i>Pica hudsonia</i> )	SoCC-3	Within Project Location	Observed during study. Considered as generalized SWH.	Treated as significant and construction mitigation provided in the EIS.
<b>cSWH</b>				
Amphibian Breeding Habitat (Wetland)	Amphibian Stations 1 to 5	Within Project Location and within 50 m	Candidate SWH present. Studies completed.	Carried Forward to EoS
<b>Natural Features</b>				
Wetlands	Wetland 1, 3	Within Project Location and within 50 m	Confirmed present. Assumed significant.	Carried Forward to EIS
Chapple Provincially Significant Wetland	Chapple PSW	Within 50 m of Project Location	Confirmed present. Confirmed significant.	Carried Forward to EIS

### 3.4.3 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)
Wetlands	Y	Y	There are wetlands in or within 50 m of the Project Location. Including a Provincially Significant Wetland. Wetlands 4 and 5 were determined to be absent as the land was actively used for agricultural activities and didn't exhibit wetland vegetation.	Y	Y
Wildlife Habitat	Possible	Y	There are cSWH and generalized cSWH identified in and/or within 50 m of the Project Location. These generalized cSWH are treated as significant and will be carried forward to the EIS. 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 Evaluation of Significance (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., wetlands 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.
- The dates of the beginning and completion of the evaluation.

### 4.2 Evaluation of Significance Methodology

The Records Review and Site Investigation identified generalized candidate Significant Wildlife Habitat (SWH). 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 SWH Schedules (MNR, 2015).

#### 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)*

The SWH Ecoregion 3E Criterion Schedule (MNR, 2015) outlines that significant Amphibian Breeding Habitats 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 3 (as defined by the Marsh Monitoring Program). As described Sections 3.2 and 3.3, anuran call surveys were completed at all wetlands. Only one frog species was documented with a call level code 3 (Spring Peeper) during any of the three 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 Generalized Candidate Significant Wildlife Habitat**

Generalized cSWH treated as significant do not require habitat use studies. Although not required, cSWH types have been evaluated through species specific studies to assess existing conditions. An assessment of potential negative environmental effects of the Project on these habitats is required as part of the EIS. Generalized cSWH types are assessed as a group and not individually. Instead, the focus is on the development activity being proposed and potential effects in the generalized cSWH area. The following generalized cSWH types have been identified within 50 m of the Project Location and are shown in Figure 3-1:

- Bat Maternity Colonies – Bat Maternity Roost habitat is considered as potentially present throughout deciduous woodlands. Throughout the Project Location, snag observations were low and ELC ecosites present 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 considered low within forested areas within the Project Location.
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat – This habitat type is associated with woodlands. A Bald Eagle nest was observed, confirming habitat has been identified within 50 m of the Project Location. The Project Location can accommodate a 120 m buffer from the feature and has been modified within Figure 4-1.

#### **4.3.3 Evaluation of Wetland Significance**

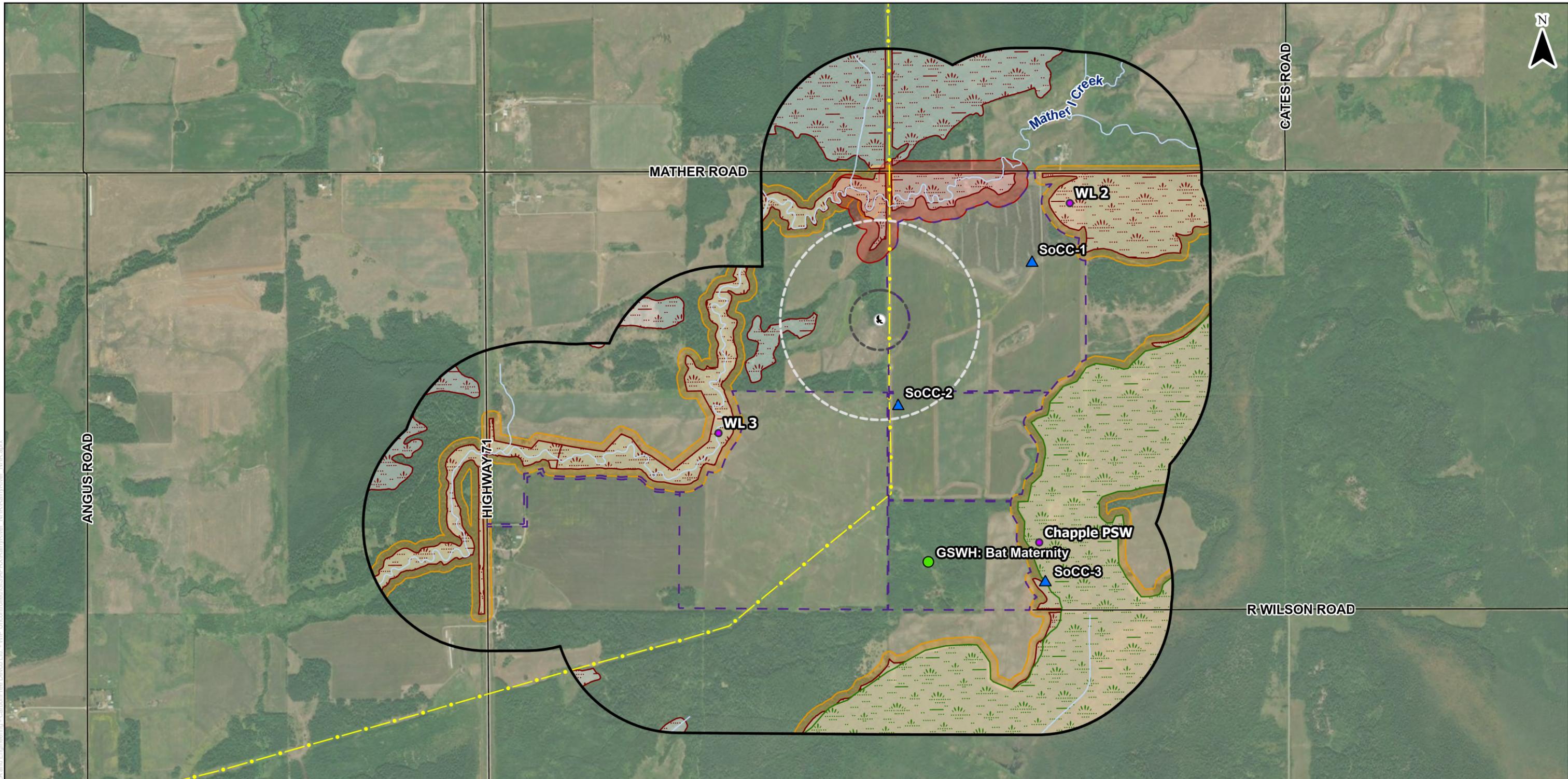
For the purposes of this NHA, all confirmed present wetlands as outlined in Figure 3-2, found to be larger than the minimum 2 ha, will be treated as significant and carried forward to the EIS. The Project Location can be set back 50 m from Wetland 1 and, therefore, Wetland 1 will not be carried forward into an EIS. The Project Location can accommodate 30 m setbacks from Wetland 2, Wetland 3 and the Chapple PSW. 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 confirmed 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 Wetlands 2 and 3.
- Chapple PSW.
- Bat Maternity Roost Habitat (generalized).
- SoCC Habitats (generalized).
- Bald Eagle Nesting Habitat (confirmed).

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



**LEGEND**

- Bald Eagle Nest
- Species of Conservation Concern
- GSWH: Bat Maternity
- Wetland
- Road
- Transmission Line
- Watercourse
- Revised Project Location
- Study Area (500m Buffer)
- Bald Eagle Nest (120m Buffer)
- Bald Eagle Nest (400m Buffer)
- Unevaluated Wetland (MNR)
- Provincially Significant Wetland (MNR)
- Wetland (30m Buffer)
- Wetland (50m Buffer)

**NOTES:**  
 1. Produced by Hatch, contains information licensed under the Open Government Licence – Ontario  
 2. Spatial referencing: NAD 1983 UTM Zone 15N



<b>PROJECT:</b> CarbonFree Rainy River Project – Natural Heritage Assessment			
<b>FIGURE TITLE:</b> Evaluation of Significance Results			
<b>CLIENT:</b> CarbonFree Rainy River LTD			
<b>DWG BY:</b> V. BAXTER	<b>CHK BY:</b> C. SEHL	<b>FIG NO.:</b> 4-1	<b>REV NO.:</b> 1
<b>DATE:</b> 09/01/26	<b>PAGE:</b> 1		

## **5. Environmental Impact Study**

### **5.1 Regulatory Requirements**

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 Significant Wildlife Habitat.
- 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.
- 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, 2012).

### **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. These Significant Natural Features identified are shown in Figure 3-2 and Figure 4-1 where relevant.

**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
<b>Generalized cSWH</b>				
Bat Maternity Colonies	Bat Maternity	Within and within 50 m from Project Location (solar facility and distribution line)	Woodland – potential for this habitat type to occur in woodlands in Project Location and within 50 m.	Treated as significant and construction mitigation provided in the EIS.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Bald Eagle Nest	Within and within 50 m from Project Location (solar facility and distribution line)	Woodland – potential for this habitat type to occur in woodlands. Nest was confirmed within 50 m of Project Location during 2025 investigations.	Project footprint will be adjusted to accommodate a minimum 120 m setback from feature. Treated as significant and construction mitigation provided in the EIS.
Species of Conservation Concern	SoCC 1-3	Within and within 50 m from Project Location (solar facility and distribution line)	Species observations were made throughout Site Investigations; however, specific habitat to support breeding is largely absent within Project Location.	Treated as significant and construction mitigation provided in the EIS.
<b>Natural Features</b>				
Unevaluated Wetlands	Wetland 1	Within and within 50 m from Project Location (solar facility and distribution line)	Confirmed to be present. Treated as Significant.	Project footprint will be adjusted to accommodate a minimum 50 m setback from feature. No EIS is therefore required.
Unevaluated Wetlands	Wetland 2	Within and within 50 m from Project Location (solar facility and distribution line)	Confirmed to be present. Treated as Significant.	The Project Location will be adjusted to abide by a 30 m setback from these features. Carried forward to EIS.
Unevaluated Wetlands	Wetland 3	Within and within 50 m from Project Location (solar facility and distribution line)	Confirmed to be present. Treated as Significant.	The Project Location will be adjusted to abide by a 30 m setback from these features. Carried forward to EIS.
Chapple PSW	Chapple PSW	Within 50 m of Project Location	Confirmed to be present.	The Project Location will be adjusted to abide by a 30 m setback from these features. Carried forward to EIS.

## 5.3 Existing Conditions of Significant Natural Features

### 5.3.1 *Wetland 2*

Wetland 2 is located within the northeast portion of the Project Location. The area contains approximately 2 ha of marsh wetland located within the Project Location. The wetland extends into a fen east of the Project Location totaling approximately 15 ha. The western extent of the wetland has been impacted by agricultural activities such as clearing and tilling and appears to be regenerating. The wetland is palustrine in nature and is relatively homogenous in habitat with no immediate connection to open water features aside from ephemeral waters associated with the roadside ditch of Mather Road.

### 5.3.2 *Wetland 3*

Wetland 1 and Wetland 3 are connected and associated with the Mather I Creek at the northwestern edge of both the north and western most parcels of land associated with the Project Location. Both Wetlands are considered a riverine marsh. Currently, agricultural activities are ongoing immediately adjacent and within the Wetlands. Wetland 3 contains riparian shrub species such as Willow (*Salix Sp.*) and Alder but is dominated by grasses, sedges and is largely characteristic of a meadow marsh. The wetland contains some signs of disturbance from farm access and water crossings across Mather Creek and adjacent agricultural activities (hay crops, cattle browsing). Based on these observations, the wetland likely serves some functionality in attenuating against water quality degradation to Mather Creek, flood attenuation and prevention of shoreline erosion.

### 5.3.3 *Chapple Provincially Significant Wetland*

The Chapple PSW contains segments of thicket swamp within the Project Location and throughout the PSW feature but is largely a treed bog wetland. The wetland is largely palustrine with some connectivity to various creeks to the south and east. The extent of the wetland extending closest to the Project Location has been impacted by past agricultural activities (grazing, vegetation removal, tilling) within the past 2 years (based on historical aerial imagery) but has since been left to regenerate.

### 5.3.4 *Bald Eagle Nest Feature*

A Bald Eagle nest was identified within 50 m of the Project Location during the initial site visit at the end of January 2025. The nest was visited again during breeding bird surveys in the summer of 2025 and confirmed to be active. Agricultural activities are currently occurring up to the boundary of the property with signs of earth works, crop management and tilling present within 100 m of the nest. Additionally, the existing transmission line runs immediately parallel to the property line and the nest (less than 50 m). Bald Eagle nesting in northwest Ontario is generally concentrated along lakes or large rivers where abundant fishing opportunities are present. This nest location is atypical in that it falls outside of a 120 m of a riparian area and Mather Creek being the closest water feature (MNR, 2014).

### 5.3.5 **Bat Maternity Roosting Habitat**

Bat maternity roosting habitat has potential to exist within all mixed or deciduous forest habitat types in Ontario. Snag density studies have indicated that all forest ecosites in proximity to the Project are likely low potential or quality for maternity roosting habitat. The only forested habitat required to be cleared is relatively young Aspen Birch forest with minimal opportunities for suitable snags for maternity roosting. This is supported by acoustic surveys associated with Unit 1 as described in Section 3.3.5.

### 5.3.6 **Species of Conservation Concern**

During breeding bird surveys, Species of Conservation Concern were observed flying and foraging in the general area of the Project Location. The open and grassland habitat is expected to be overall suitable to support foraging activities; however, it is likely that breeding largely occurs elsewhere based on the results of breeding bird surveys, available habitat on site and the existing land use of the site.

## 5.4 **Project Components and Activities**

The following sections briefly 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 the Project Description Report, Construction Plan Report, Design and Operations Report, and Decommissioning Plan Report once created.

### 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. Activities associated with construction are summarized in Table 5-2. Further details regarding construction activities will be provided in the Construction Plan Report.

**Table 5-2: General Description of Construction Activities**

Activity	Description
Access Road Construction	Activities associated with construction of internal access roads will include <ul style="list-style-type: none"> <li>• vegetation clearing as necessary</li> <li>• topsoil removal</li> <li>• placement of granular base</li> <li>• installation of ditches and culverts, as required</li> <li>• removal of any access roads not required, replacement of topsoil, and seeding.</li> </ul>
Site Preparation	Activities associated with the site preparation will include <ul style="list-style-type: none"> <li>• removal of trees and large standing vegetation from areas where PV arrays will be constructed</li> <li>• preparation and implementation of a sediment and erosion control plan</li> <li>• determination of locations of topsoil, timber, and vegetation stockpiles (not within 30 m of any identified wetlands or waterbodies).</li> </ul>

Activity	Description
Installation of Support Structures, PV Modules, Trackers, and Mounting Racks	<p>Activities associated with the installation of support structures will include</p> <ul style="list-style-type: none"> <li>• construction of foundations and/or support structures beneath transformers, inverters and PV panels</li> <li>• installation of PV panels on racks mounted on tracking structures</li> <li>• installation of steel piles to be driven or screwed into the ground to support tracking structures and PV panels</li> <li>• inspection of foundation construction and support structures prior to installation of PV panels and wiring.</li> </ul>
Electrical Cable Installation	<p>Activities associated with underground cable installation will include</p> <ul style="list-style-type: none"> <li>• installation of underground DC cabling from the termination point of the PV array to the inverters and medium-voltage transformers</li> <li>• installation of overhead and underground cabling from the inverters as necessary, to connect the PV array to the proposed substation and HONI transmission system</li> <li>• 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.</li> <li>• installation of a short (approximately 50 m) overhead transmission line to enable connection to the existing HONI 115 kV transmission line. This is to be constructed between the substation yard and point of interconnection (POI) with the existing HONI transmission line.</li> </ul>
Substation Construction	<p>Activities associated with the substation construction will include</p> <ul style="list-style-type: none"> <li>• 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.</li> </ul>
Site Security	<p>Activities associated with site security will include</p> <ul style="list-style-type: none"> <li>• installation of perimeter fencing consisting of a chain-link fenced topped with barbed wire and access gates to prevent unauthorized access.</li> </ul>

#### 5.4.2 **Operation 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 on a monthly basis. 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, 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 anticipated 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.

Unless access is required for annual vegetation control, there will be no activities occurring within the 30 m buffers from any wetland surrounding the Project Location. Further details regarding construction activities will be provided in the Design and Operations Report.

### **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.
- A Decommissioning Plan Report will be developed and published as part of the REA application process.

Further details regarding decommissioning activities will be provided in the Decommissioning Plan Report.

## 5.5 Environmental Effects Assessment

Multiple generalized candidate SWH (cSWH) types (as summarized in Section 5.2) have been identified in and within 50 m of the Project Location and are being treated as significant as part of the EIS. In accordance with the NHAG (MNR, 2012) an assessment of direct and indirect effects to significant natural features.

### 5.5.1 Wetlands

The Project Location has been set back 30 m from all wetlands identified in proximity to the Project.

Generally, only indirect effects to the wetland are expected based on the 30 m setback implemented between the wetlands. Generally, construction work adjacent wetlands can cause soil compaction and impact soil stability due to grading and vegetation removal. This can cause sediment and erosion events that can degrade adjacent features and impact drainage patterns. Utilization of machinery carries risk of spilling deleterious material that can also impact adjacent features when left unmitigated. Dust may be mobilized due to vehicular traffic and heavy machinery use, drilling (if necessary for solar panel installation) and soil moving activities (e.g., excavation, grading, trenching).

Where the Project Location extends within 50 m of one of these features, sediment and erosion controls will be put in place to minimize impacts to the wetland. Spill prevention and response measures will be put in place to reduce the likelihood of a spill occurring and impacting the feature. Visual monitoring of dust will occur throughout construction activities. The following mitigation measures may be implemented if dust levels are observed to be high:

- Use of dust suppression (i.e., water or non-chloride based materials) on exposed areas including access roads, stockpiles and works/laydown areas.
- Adding coarse granular material, free of fine soil particles on access roads or high traffic work areas.
- Phased construction where possible to minimize duration of soil exposure.
- Stockpiles and disturbed areas may be stabilized (i.e., tarped, mulched, graded, or vegetated) to reduce release of fugitive dust.

Through the implementation of these mitigation measures and abiding by the prescribed setbacks, negative effects to wetlands are expected to be negligible throughout all phases of the Project. The implementation of a 30 m setback may ultimately have a positive effect on the wetlands, reducing encroachments from adjacent land uses such as cattle grazing, vegetation clearing and land tilling associated with the existing agriculture. Setbacks of 30 m are largely the provincial standard for mitigation effects to wetlands based as reflected in the Provincial Policy Statement (King's Printer for Ontario, 2024) and the *Conservation Authorities Act*.

The construction of the Project will include the creation of a stormwater management plan expected to maintain the existing drainage regime in the area. As such, no impacts to wetlands are expected throughout the operation of the facility.

Effects during decommissioning activities are expected to be similar to those described in relation to construction.

#### **5.5.2 Grassland Birds (SoCC)**

Potential effects of the Project on grassland birds can largely be avoided through seasonal timing windows associated with clearing and tilling land. The grassland habitat for SoCC species is marginal as minimal perching areas and cover is available for these species. Construction will be phased to minimize impacts on grassland birds. All earthworks will commence outside of the grassland bird nesting period to minimize direct effects on resident grassland bird species and prevent direct impacts to active nests.

No impacts to grassland bird SoCC species are expected to occur throughout operation or decommissioning.

#### **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 and tilling land. 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.

No impacts to bat maternity roost habitat are expected to occur throughout operation or decommissioning.

#### **5.5.4 Bald Eagle Nesting Habitat**

As described in Section 4.3.2, Bald Eagle Nesting activity was confirmed to occur within 50 m of the Project Location. Nesting activity is typically tied to riparian areas of lakes, rivers and significant creeks. Mather Creek is the closest water body to the Bald Eagle nest. The Project Location generally avoids areas between the active nest and Mather Creek and, therefore, foraging activities associated with the nesting are not expected to be affected.

Bald Eagle nesting activity is sensitive to disturbance during nesting and feeding periods defined as February 15 to August 15 in northwest Ontario. Flushing of nesting eagles from the nest could occur due to the increased presence of humans, construction equipment, or installation activities during this period. Additionally, noise and maintenance activities occurring during operation of the facility may present an ongoing disturbance to nesting activity during this time period. Indirectly, impacts to resident fish populations within Mather Creek could affect Bald Eagle's changing or increasing effort required to forage.

According to the SWHMist tool (MNR, 2014), SWH associated with Bald Eagle nests extends 400 to 800 m from the active nest where contiguous woodlands are present. The 400 to 800 m depends on lines of site and existing presence of human disturbances. Smaller or larger setbacks may be appropriate depending on the birds' tolerance for human disturbance. Development on lands adjacent to wetlands or waterbodies being used as nesting sites may have little impact on their function, depending on the distance of the development from the significant habitat (foraging, roosting, flight paths), the types of activity that may occur, and the level of eagle habituation to human disturbance.

In the case of the nest adjacent to the proposed Project, the nearest water body likely to be used as foraging/roosting habitat is Mather Creek. In all cases flight paths between the nest and creek avoid the potential Project. No tree clearing will be completed along the creek as a 30 m setback will be applied from the Project Location to the wetland areas surrounding Mather Creek. An existing transmission line is present within 50 m of the nest feature and agricultural activities are ongoing in all directions surrounding the nest feature, suggesting some level of habituation to human disturbance.

To minimize effects on the nesting feature, the Project Location will be set back 120 m. Major construction such as Site Clearing (earthworks) and foundation installation will be limited to periods outside of the sensitive period (August to February) within 400 m of the Bald Eagle Nest. Tree clearing will largely avoid areas within approximately 800 m of the nesting feature. All tree clearing will take place outside of the most sensitive timing windows associated with Bald Eagle nesting. This is expected to preserve any present roosting or foraging activity that is taking place in the area. Standard sediment and erosion controls will be in place to minimize impacts of potential sedimentation events to riparian areas throughout construction. This is expected to be sufficient to prevent impacts to resident fish populations, minimizing potential indirect effects on Bald Eagle nesting activities.

To minimize impacts during operations, noise generating equipment (substation, transformers and inverters) will be located a minimum of 400 m away from the nest feature. Further noise studies will take place to predict impacts to baseline noise levels in the area and specifically the Bald Eagle Nest Feature. A stormwater management plan and design will be developed and is expected to minimize or prevent changes to the adjacent water levels or quality of Mather Creek.

Further construction monitoring is proposed to take place to understand potential impacts to the feature. Generally, the 400 m restricted area will be removed where the Bald Eagle nest is no longer or not in use during the construction period. Similarly, if visible agitation or disturbance is noted to nesting Bald Eagles, larger construction setbacks may be proposed during the nesting and rearing periods.

### 5.5.5 **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, with criteria outlined in Table 5-3 below.

**Table 5-3: Environmental Effects Analysis Criteria**

Criteria	Description of Threshold Ratings
Magnitude	<ul style="list-style-type: none"> <li>• <b>Negligible (0):</b> No detectable change from baseline conditions.</li> <li>• <b>Low (1):</b> Differs from the average value for baseline conditions but remains within the range of natural variation and below a guideline or threshold value.</li> <li>• <b>Medium (2):</b> 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.</li> <li>• <b>High (3):</b> 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.</li> </ul>
Geographical Extent (Biophysical)	<ul style="list-style-type: none"> <li>• <b>Project Location (1):</b> Impact is limited to the Project Location.</li> <li>• <b>Study Area (within 50 m of Project Location) (2):</b> Effect occurs throughout the Study Area.</li> <li>• <b>Beyond Study Area (3):</b> Effect extends beyond the Study Area.</li> </ul>
Duration	<ul style="list-style-type: none"> <li>• <b>Short Term (1):</b> Impact lasts less than 2 years (e.g., during the Construction Phase of the Project).</li> <li>• <b>Medium Term (2):</b> Impact lasts from 2 to 50 years (i.e., encompassing construction and operation phases).</li> <li>• <b>Long Term (3):</b> Impact lasts from 50 to 53 years (i.e., impact lasts into the decommissioning and post-closure phase).</li> </ul>
Frequency	<ul style="list-style-type: none"> <li>• <b>One Time (1):</b> Impact is confined to one discrete event.</li> <li>• <b>Sporadic (2):</b> Impact occurs rarely and at sporadic intervals.</li> <li>• <b>Regular (3):</b> Impact occurs on a regular basis.</li> <li>• <b>Continuous (4):</b> Impact occurs constantly.</li> </ul>
Reversibility	<ul style="list-style-type: none"> <li>• <b>Reversible (1):</b> Impact can be reversed.</li> <li>• <b>Partially Reversible (2):</b> Impact can be partially reversed.</li> <li>• <b>Permanent (3):</b> Impact cannot be reversed, is of permanent duration.</li> </ul>
Ecological and Socio-Economic Context	<ul style="list-style-type: none"> <li>• <b>High (1):</b> The receiving environment or population has a high natural resilience to imposed stresses, and can respond and adapt to the impact.</li> <li>• <b>Neutral (2):</b> The receiving environment or population has a neutral resilience to imposed stresses and may be able to respond and adapt to the impact.</li> </ul>

Criteria	Description of Threshold Ratings
	<ul style="list-style-type: none"> <li>• <b>Low (3):</b> The receiving environment or population has a low resilience to imposed stresses, and will not easily adapt to the impact.</li> </ul>
Certainty of Knowledge	<ul style="list-style-type: none"> <li>• <b>High (1):</b> 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.</li> <li>• <b>Moderate (2):</b> 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.</li> <li>• <b>Low (3):</b> 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.</li> </ul>

**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
Chapple PSW Wetland 2 and Wetland 3	<b>Construction Phase</b> <ul style="list-style-type: none"> <li>Site preparation (vegetation clearing, minor grading).</li> <li>Access roads (water crossings).</li> <li>Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).</li> </ul> <b>Decommissioning Phase</b> <ul style="list-style-type: none"> <li>Removal of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).</li> </ul>	<ul style="list-style-type: none"> <li>Alteration to drainage regime along the edge of the wetland (Construction and Decommissioning phases).</li> <li>Soil compaction.</li> <li>Changes in moisture regime.</li> <li>Fugitive dust.</li> <li>Spills (e.g., fuel).</li> <li>Sedimentation.</li> <li>Introduction of invasive species.</li> </ul>	<ul style="list-style-type: none"> <li>Setback Project components and fencing 30 m from features.</li> <li>Flag buffer area to prevent unauthorized access during construction.</li> <li>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.</li> <li>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.</li> <li>Grading and civil design will consider existing drainage patterns to minimize impacts to wetland moisture regime.</li> </ul>	0	1	1	1	2	1	1
Bat Maternity Roost Habitat	<b>Construction Phase</b> <ul style="list-style-type: none"> <li>Site preparation (vegetation clearing, minor grading).</li> </ul>	Loss of habitat function following construction of the Project is expected. Incidental take of individuals is possible if clearing takes place within the bat maternity roost window.	<ul style="list-style-type: none"> <li>Complete site clearing and grading outside of the active bat maternity period (April 15 to August 31).</li> <li>Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.</li> </ul>	1	1	2	1	3	1	1
SoCC Grassland Birds	<b>Construction Phase</b> <ul style="list-style-type: none"> <li>Site preparation (vegetation clearing, minor grading).</li> <li>Access roads (water crossings).</li> <li>Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).</li> </ul>	Temporary loss of available foraging or nesting habitat. Incidental take of individuals is possible if clearing takes place within the bird nesting window.	<ul style="list-style-type: none"> <li>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),</li> <li>Flag project extents to prevent unauthorized access during construction to areas not required to be cleared for the Project.</li> </ul>	1	2	2	1	3	2	1
Bald Eagle/Osprey Nesting	<b>Construction Phase</b> <ul style="list-style-type: none"> <li>Site preparation (vegetation clearing, minor grading).</li> <li>Access roads (water crossings).</li> <li>Installation of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).</li> </ul> <b>Operation Phase</b> <ul style="list-style-type: none"> <li>Accessing area for maintenance activities.</li> <li>Maintenance activities within 400 m of features.</li> </ul> <b>Decommissioning Phase</b> <ul style="list-style-type: none"> <li>Removal of Project Components (e.g., access roads, perimeter fencing, solar panels, underground cables).</li> </ul>	Noise and visual disturbance to nest feature.	<ul style="list-style-type: none"> <li>Setback Project components 120 m from Significant Wildlife habitat (SWH).</li> <li>Construction timing to avoid work within 400 m of feature within sensitive nesting/rearing periods (February 15 to August 15).</li> <li>Locating noise generating equipment outside of a 400 m setback from the feature.</li> <li>Ongoing monitoring of usage or observed disturbance during sensitive nesting or rearing windows.</li> </ul>	2	2	2	2	2	2	2

## 5.6 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.
- A program for monitoring negative environmental effects for the Project duration, including a contingency plan, to be implemented if any mitigation measures fail.

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.

This material will be carried forward into the Projects Construction Plan Report, Design and operations Report and Decommissioning Plan Report.

**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.  Sediment and erosion controls (e.g., silt fences, rock check dams, straw bales, erosion control blankets) 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 inspections throughout construction and operation.	Visual monitoring of erosion would identify potential areas of concern.	Maintenance and improvement requirements actioned as needed 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/change in drainage and hydrological conditions.	Stormwater management measures which may include enhanced vegetated swales, ditch flow controls and filter strips.	Minimal changes in drainage and conditions of receiving wetlands and 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.	Minimal 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 species of conservation concern in which case reporting will be immediate to the MECP/Environment Canada.	If incidental take of species of conservation concern 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.

Negative Effect	Mitigation Strategy	Performance Objective	Monitoring Plan				Contingency Measures	
			Methodology	Monitoring Locations	Frequency	Rationale		Reporting Requirements
Loss of Species of Conservation Concern 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	Project setbacks, construction timing.	Minimal instances of disturbing Bald Eagle from nest when active.	Ongoing observation when working within 800 m of bald eagle nest	Bald Eagle Nest and buffer area.	Daily during construction commencement during February 15 to August 15 timeframe. Once setback is established at sufficient distance weekly observations.	If nesting eagle is flushed from its nest several times throughout the day due to noise/disturbance, construction setbacks may need to be reevaluated during sensitive time periods.	Documented internally as needed in monthly construction monitoring reports.	Widening construction setbacks during sensitive nesting and rearing periods.

## 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, particularly wetlands and watercourses, which exist on the edges of the Project boundaries. 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.

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# Appendix A

## Species Identified in the Records Review

Species (Common Name)	Scientific Name	S-Rank	SARO	SARA	COSEWIC	Resource
<b>Birds</b>						
American White Pelican	<i>Pelecanus erythrorhynchos</i>	S3B, S4M	THR	-	-	eBird (Riverview Park, Emo Sewage Lagoons)
Bald Eagle	<i>Haliaeetus leucocephalus</i>	S4	SC	-	-	eBird (Riverview Park, Emo Sewage Lagoons), iNaturalist
Bank Swallow	<i>Riparia riparia</i>	S4B	THR	THR	THR	eBird (Emo Sewage Lagoons)
Barn Swallow	<i>Hirundo rustica</i>	S4B	SC	THR	SC	NHIC (15VP3498), eBird (Riverview Park, Emo Sewage Lagoons), OBBA (15VP39), iNaturalist
Black-billed Magpie	<i>Pica hudsonia</i>	S2	-	-	-	NHIC (15VP3498, 15VP3599), eBird (Riverview Park, Emo Sewage Lagoons), OBBA (15VP39), iNaturalist
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	S2	-	-	-	NHIC (15VP3498), eBird (Emo Sewage Lagoons), OBBA (15VP39), iNaturalist
Bobolink	<i>Dolichonyx oryzivorus</i>	S4B	THR	THR	SC	eBird (Emo Sewage Lagoons), OBBA (15VP39), iNaturalist
Canada Warbler	<i>Cardellina canadensis</i>	S5B	SC	THR	SC	eBird (Emo Sewage Lagoons)
Chimney Swift	<i>Chaetura pelagica</i>	S4B	THR	THR	THR	OBBA (15VP39)
Golden-winged Warbler	<i>Vermivora chrysoptera</i>	S3B	SC	THR	THR	OBBA (15VP39)
Lesser Yellowlegs	<i>Tringa flavipes</i>	S3B, S5M	THR	-	THR	eBird (Emo Sewage Lagoons)
Western Meadowlark	<i>Sturnella neglecta</i>	S1B	-	-	-	NHIC (15VP3396, 15VP3197, 15VP3498, 15VP3599), eBird (Emo Sewage Lagoons), OBBA (15VP39), iNaturalist
<b>Mammals</b>						
Eastern Red Bat	<i>Lasiurus borealis</i>	-	Under Consideration	Under Consideration	END	Recovery Strategy / COSEWIC
Eastern Small-footed Myotis	<i>Myotis leibii</i>	-	END	END	END	Recovery Strategy / COSEWIC
Hoary Bat	<i>Lasiurus cinereus</i>	-	Under Consideration	Under Consideration	END	Recovery Strategy / COSEWIC
Little Brown Myotis	<i>Myotis lucifugus</i>	-	END	END	END	
Northern Myotis	<i>Myotis septentrionalis</i>	-	END	END	END	Recovery Strategy / COSEWIC
Tri-coloured Bat	<i>Perimyotis subflavus</i>	-	END	END	END	Recovery Strategy / COSEWIC
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	-	Under Consideration	Under Consideration	END	Recovery Strategy / COSEWIC

# Appendix B

## Site Investigator Qualifications

Details and Qualifications	
Name	Chris Sehl
Education and Professional Affiliations	<ul style="list-style-type: none"> <li>• B.Sc. (Environmental Science), University of Guelph (2015)</li> <li>• Graduate Diploma (Environmental Management and Assessment), Niagara College (2017)</li> </ul>
Years in Practice	Over 10 years
Experience Summary	Chris has supported a wide range of energy, infrastructure, and resource projects across Ontario and eastern Canada. He has extensive experience completing and supporting environmental studies and field investigations for renewable energy, transmission, hydroelectric, transportation, mining, and marine projects. His experience includes terrestrial and aquatic assessments, species at risk surveys and monitoring, habitat evaluations, water and sediments sampling, and environmental compliance monitoring. Chris regularly supports environmental permitting and approvals processes and works closely with regulators, Indigenous communities, municipalities, and project teams to help navigate environmental requirements and support responsible project delivery.
Certifications and Professional Development	<p><u>Certificates:</u></p> <ul style="list-style-type: none"> <li>• Standard First Aid Level C, Canadian Red Cross, 2022</li> <li>• Class 2 Backpack Crew Leader Electrofishing Course, 2021</li> <li>• Certification in Ichthyology for identification of Ontario fishes, Royal Ontario Museum - Department of Natural History, 2018</li> </ul> <p><u>Professional Development:</u></p> <ul style="list-style-type: none"> <li>• Fisheries Specialist Training, Ontario Ministry of Transportation, 2018</li> </ul>

Details and Qualifications	
Name	Taylor Simpanen
Education and Professional Affiliations	<ul style="list-style-type: none"> <li>• Dipl. Fish and Wildlife Technician (2018)</li> <li>• Dipl. Arboriculture and Urban Forestry (2019)</li> <li>• Ontario Breeding Bird Atlas</li> <li>• Bird Studies Canada</li> </ul>
Years in Practice	Over 5 years
Experience Summary	Taylor has worked on numerous renewable power projects including hydropower, pumped storage, solar, and wind facilities during his career. He has extensive knowledge and experience completing terrestrial and aquatic field investigations, including Species at Risk (SAR) surveys and monitoring, habitat assessments (including critical habitat), breeding birds, amphibian and reptile, mammals, fisheries, benthics, botanical identification and inventories, Ecological Land Classification (ELC) surveys, wetland delineations, tree health assessments, aquatic and significant wildlife habitat assessments, water quality monitoring, hydrological assessments, and soil sampling.
Certifications and Professional Development	<p><u>Certificates:</u></p> <ul style="list-style-type: none"> <li>• Maritimes Wetland Evaluation System Training (2024)</li> <li>• Ecological Land Classification (ELC) (2023);</li> <li>• Butternut Health Assessor (2022).</li> <li>• Class 2 Crew Lead Electrofisher (2017)</li> <li>• OBBN (2018)</li> </ul> <p><u>Professional Development:</u></p> <ul style="list-style-type: none"> <li>• NHIC Data Sensitivity Training Course (2025);</li> <li>• Wood Turtle Habitat Assessment Training (2023);</li> <li>• IBP Banding Certificate (2020);</li> <li>• Bird Studies Canada Migration Monitoring Training (2018)</li> </ul>

Details and Qualifications	
Name	Audrey Nerino
Education and Professional Affiliations	<ul style="list-style-type: none"> <li>• BA (Environmental Studies, Geography), Lakehead University (2019);</li> <li>• Certificate Program (Geomatics), Lakehead University (2019)</li> </ul>
Years in Practice	Over 5 years
Experience Summary	Audrey is an Environmental Scientist with extensive experience supporting infrastructure, energy, and environmental projects across Ontario, Quebec, and British Columbia. Her work focuses on indigenous engagement, environmental planning, and consultation support, with experience contributing to environmental assessments, Class EAs, and federal evaluations. Audrey regularly supports baseline data review, literature reviews and gap analyses, and consultation planning and documentation to ensure Indigenous knowledge, environmental considerations, and regulatory requirements are appropriately reflected in project decision-making.
Certifications and Professional Development	Certificates: <ul style="list-style-type: none"> <li>• Certified Management Professional (CMP)</li> </ul>