# Environmental Impact Study – 117 Durham Street, Town of Cobourg, County of Northumberland, Ontario

2024-01-30

Prepared for:
The Corporation of the Town of Cobourg

Cambium Reference: *18288-002*



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# 1.0 Introduction

Cambium Inc. (Cambium) was retained by The Corporation of the Town of Cobourg to conduct an Environmental Impact Study at 117 Durham Street, Town of Cobourg, Northumberland County, Ontario (Figure 1). We understand that the potential future land uses for the property may include parkland, market, and affordable residential units and that the current Study is required to establish the development limits. Given the location and scale of the proposed development, the entire property will be considered the Site for the purpose of the Study.

The following Environmental Impact Study (EIS; the Study) addresses potential impacts on natural heritage features identified during the preliminary development review process, as required by the Provincial Policy Statement, 2020 (PPS). The Site contains or is adjacent to (within 120 meters [m] of) the following mapped natural heritage and hydrologic features: Lake Ontario. The Site is within Ecoregion 6E of Ontario (Crins, Gray, Uhlig, & Wester, 2009). The Site is within the Town of Cobourg settlement area.

The Site is within the jurisdiction of the Ganaraska Region Conservation Authority (GRCA), and their regulated area overlaps the Site. The regulated area is associated with Lake Ontario on the Site and adjacent lands. As such, the Study will consider regulations on development as imposed by the Conservation Authorities Act, 1990.

The Endangered Species Act, 2007 (ESA) protects endangered and threatened species and their habitats from harm or destruction. Habitat for endangered and threatened species is also afforded protection under provincial natural heritage policy; however, it is ultimately the proponent's responsibility to ensure that no harm to these species or their habitats occurs during their planned activities. This Study includes a habitat-based screening for species of conservation concern to determine if the Site has a suitable habitat for provincially or federally listed species at risk (SAR).

This Study has been prepared to meet application submission standards for the proposed development of the Site. It includes the results of the background review, a description of methods used to collect Site-specific natural heritage information, and a summary of field

investigations conducted on the Site. Information has been compiled to characterize the existing form and function of natural heritage features on and adjacent to the Site and evaluate the significance and sensitivity of those features. Furthermore, an assessment of the potential for impacts to these features in relation to the proposed development is provided. Data was interpreted in accordance with provincial and municipal policies and regulations to determine potential constraints to development, to guide the decision-making process and to address approval authority requirements.

## 1.1 Terms of Reference

The Terms of Reference (TOR) were circulated to Vanessa Reusser at The Corporation of the Town of Cobourg. A response was received from Vanessa Reusser on November 21, 2023. Overall, The Corporation of the Town of Cobourg was in support of the TOR. Relevant correspondence and documentation are included in Appendix A.

## 1.2 Summary of Proposed Development

The Site is a vacant sports field of about 1.85 hectares [ha]. Adjacent land use includes residential to the west, north, and east, and beach use to the south. The Site is being considered for redevelopment of land which may include parkland, market, and affordable residential units. It is presumed that no in-water work, including marine docking facilities, is being proposed for this Site or adjacent lands.

# 2.0 Natural Heritage Policy Context

The evaluation of the form and function of natural heritage features present on, and adjacent to, the Site was undertaken to meet the requirements of the following legislation, plans and policies:

- Provincial Policy Statement (PPS), 2020
- Policies for the Implementation of Ontario Regulation 168/06, 2014
- Town of Cobourg Official Plan, 2018 and Zoning By-law 83, 2003
- Northumberland County Official Plan, 2016
- *Endangered Species Act* (ESA), 2007
- *Fisheries Act*, 2019
- *Species at Risk Act* (SARA), 2002
- *Migratory Birds Convention Act* (MBCA), 1994
- *Invasive Species Act*, 2015

This Study includes an assessment of conformity of the proposed development with relevant natural heritage policies. A summary of policy conformity is included in Section 7.0.

## 2.1 Provincial Policy Statement, 2020

The PPS provides direction on matters of provincial interest related to land use planning and development. Section 2.1 of the PPS (Ministry of Municipal Affairs and Housing, 2020) protects the form and function of eight types of significant natural heritage features, which include:

- significant wetlands
- significant coastal wetlands
- significant woodlands (limited to Ecoregions 6E and 7E)
- significant valleylands
- significant wildlife habitat (SWH)
- significant areas of natural and scientific interest (ANSI)
- fish habitat

- habitat of endangered and threatened species

Given their significance, development and Site alteration are prohibited within provincially significant wetlands (PSW) in Ecoregions 5E, 6E, and 7E and within significant coastal wetlands. Development and Site alteration in fish habitat and the habitat of endangered and threatened species shall only be permitted in accordance with provincial and federal requirements. Development and Site alteration within other natural heritage features and on lands adjacent to all natural heritage features may be permitted if it is demonstrated that there will be no negative impacts on the feature or its ecological function. The PPS defines "development" as the creation of a new lot, a change in land use, or the construction of buildings and structures requiring approval under the Planning Act. "Site alteration" means activities, such as grading, excavation and the placement of fill that would change the landform and natural vegetative characteristics of a Site.

Section 2.2 of the PPS protects the quality and quantity of water, including the form and hydrologic function of sensitive surface water features and sensitive ground water features. Focus is given to maintaining hydrologic linkages and functions at the watershed scale to minimize potential negative impacts, including cross-jurisdictional and cross-watershed impacts of development. Mitigative measures and/or alternative development approaches should be considered for development near water features.

## 2.2 Conservation Authority Regulation

"Conservation Authorities are community-based watershed management agencies, whose mandate is to undertake watershed-based programs to protect people and property from flooding, and other natural hazards, and to conserve natural resources for economic, social and environmental benefits" (Conservation Ontario, 2022). Conservation Authorities each have their own Ontario Regulation under the *Conservation Authorities Act, 1990*.

GRCA regulates these features under Ontario Regulation 168/06: Regulation of Development, Interference with Wetlands and Alterations to Shorelines and Watercourses.

## 2.3 Official Plan and Zoning By-Law

The land use designations and zoning of the Site are summarized in Table 1:

**Table 1 Summary of Municipal Official Plan and Zoning By-law Designations**

| Source | Designation / Zoning |
|---|---|
| Official Plan – Northumberland County | Urban Area |
| Official Plan – Town of Cobourg | Major Institutional and Environmental Constraint Area |
| Zoning By-law – Town of Cobourg | Open Space (OS) and Environmental Constraint (EC) |

## 2.4 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list, and their habitats, are protected under the provincial ESA (Government of Ontario, 2007). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Protection of special concern species is provided through designation of their habitat as SWH, a provincially protected natural heritage feature. SAR are discussed throughout this report, as applicable.

## 2.5 Fisheries Act

Fisheries and Oceans Canada (DFO) administers the federal *Fisheries Act* which defines fish habitat as "*spawning grounds and other areas, including nursery, rearing, food supply and migration areas, on which fish depend directly or indirectly in order to carry out their life processes*" (Subsection 2(1)). Works within and adjacent to lakes, watercourses, and other bodies of water containing fish have the potential to impact fish and/or fish habitat. The Fisheries Act prohibits the harmful alteration, disruption, or destruction (HADD) of fish habitat (Subsection 35(1)), which is defined as "*any temporary or permanent change to fish habitat that directly or indirectly impairs the habitat's capacity to support one or more life processes*".

Furthermore, any work, undertaking, or activity other than fishing that results in the death of fish is considered an offence.

As a result of amendments to the *Fisheries Act* in 2019, projects near water that could potentially impact fish or fish habitat may require DFO review. The primary purpose of the review is to determine whether the death of fish and/or HADD of fish habitat, as defined by the Act, can be avoided. The DFO Fisheries Protection Program provides a Decision Framework and guidance material applicable to these reviews (available on-line at www.dfo-mpo.gc.ca/pnw-ppe/index-eng.html).

## 2.6 Species at Risk Act

The federal SARA was adopted in 2002 to prevent endangered or threatened species from becoming extinct or extirpated, to help in the recovery of endangered, threatened, and extirpated species, and to manage species of special concern to help prevent them from becoming endangered or threatened. Habitat which is deemed necessary for the survival/recovery of a listed wildlife species, referred to as Critical Habitat, is protected under Section 56 of the SARA. The SARA applies to all federal lands in Canada; however, at-risk aquatic and migratory bird species located on private property in Ontario also receive protection under the Act.

Known aquatic SAR populations and associated critical habitats are mapped by DFO. Critical habitat for aquatic SAR may include areas used for spawning, rearing young, feeding, overwintering, and migration.

## 2.7 Migratory Birds Convention Act, 1994

The federal MBCA prohibits killing, capturing, injuring, taking or disturbing of the listed migratory birds. Including damaging, destroying, removing, or disturbing of nests of all migratory bird species that contain a live birds or viable eggs. In 2022, new Migratory Birds Regulations (MBR) were adopted that afford year-round protection to the nests of 18 migratory species, until the nest is deemed to be abandoned. Nest abandonment must be reported through the Abandoned Nest Registry, administered by Environment and Climate Change

Canada (ECCC), if there is a need to damage, disturb, destroy, or remove a nest of a species listed in Schedule 1 of the MBR. The time period to confirm nest abandonment varies by species, and ranges from 12 to 36 months.

# 3.0 Technical Approach and Data Collection Methods

## 3.1 Background Information Review

Supporting background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. Data was obtained from provincial, municipal, and other online resources to provide context to the development proposal, and to guide development of the Site-specific work program. Field studies were subsequently conducted to verify and/or add detail to the high-level contextual information derived from these publicly available resources.

The comprehensive desktop review for this Site included the following resources:

- Land Information Ontario (LIO) database via the online Natural Heritage Areas: Make-a-Map tool (Ministry of Natural Resources and Forestry, 2022)
- Natural Heritage Information Center (NHIC) database: SAR occurrence records
- Online Atlas Data:
  - Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018)
  - Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005)
- Aquatic Species at Risk distribution maps (Fisheries and Oceans Canada, 2022)
- Aquatic Resource Area Summary Data (Government of Ontario, 2022)
- Fish ON-Line (Ministry of Natural Resources and Forestry, 2022)

Mapped natural heritage features present in the general area of the Site are shown in Figure 1. A summary of background review results is provided in Table 2.

**Table 2 Background Review Summary**

| Source | Location Reference | Relevant Records |
|---|---|---|
| LIO Geographic Database | Site and 120 m adjacent lands | Lake Ontario |
| NHIC Database | 17QJ2670<br>17QJ2770 | American Eel – END<br>Barn Swallow – SC<br>Canada Warbler – SC<br>Cerulean Warbler – THR<br>Eastern Meadowlark – THR<br>Eastern Wood-pewee – SC<br>Grasshopper Sparrow – SC<br>Northern Brook Lamprey – SC<br>Red-headed Woodpecker – END<br>Silver Lamprey – SC |
| Ontario Breeding Bird Atlas (OBBA) | 17TQJ27 | Incorporated into list of species within Appendix B |
| Ontario Reptile and Amphibian Atlas (ORAA) | 17QJ27 | Incorporated into list of species within Appendix B |
| Aquatic SAR distribution maps | Site and 120 m adjacent lands | Shortnose Cisco – END<br>Silver Lamprey – SC<br>Northern Brook Lamprey – SC |

*Note: THR = Threatened species on SARO list ; END = Endangered species on SARO list; SC = Special concern species on SARO list. The Species of Conservation Concern Screening provided in Appendix B includes a list of all species within the overlapping OBBA and ORAA squares with potential policy implications.*

## 3.2 Consultation and Agency Correspondence

Regulatory agency consultation may involve input from DFO, the Ministry of Natural Resources and Forestry (MNRF), the Ministry of Environment, Conservation, and Parks (MECP), and/or the local Conservation Authority, as applicable. The MECP is responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled *Client's Guide to Preliminary Screening for Species at Risk* (Ministry of the Environment, Conservation and Parks, 2019). This document aims to "help clients better understand their obligation to gather information and complete a preliminary screening for SAR

before contacting the Ministry". This document was used to guide the SAR habitat-based screening for the Study.

For this Study, the following agencies were consulted directly regarding the development proposal:

- The Corporation of the Town of Cobourg

Relevant correspondence has been included in Appendix A.

## 3.3 Field Investigations

Ecological investigations were completed on the Site by a team of qualified ecologists to understand potential ecological constraints to development and opportunities for restoration/enhancement. Information gathered through the background review was used to guide the development of the fieldwork program and was supplemented with additional Site-specific information gathered through various standard methodologies. Survey methodologies for each of the field investigations completed on the Site are described in the following sections.

All surveys were conducted by appropriately trained Cambium staff. Survey stations were GPS marked in the field. Data were documented manually, reviewed upon return to the office, and transposed to digital format for secure data management.

### 3.3.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, et al., 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, et al., 1998) and the revised 2008 tables. ELC units were initially delineated and classified by orthoimagery interpretation. Field investigations served to confirm the type and extent of ELC communities on the Site through vegetation inventory, and soil assessment with a hand auger where vegetation types could not be classified based on vegetation alone. Where vegetation

communities extended off the Site, classification was done through observation from property boundaries and publicly accessible lands.

Data includes the provincial status of plant species and vegetation communities, where such information exists. Sensitivity of individual vegetation species was evaluated based on the coefficient of conservatism (CC) which is a measure of the tolerance of a species to disturbance and fidelity to a specific habitat type; species with CC of 9-10 exhibit a high degree of fidelity to a narrow range of habitat parameters. The sensitivity of vegetation communities was evaluated through an assessment of various community attributes including age, habitat quality, degree of disturbance, presence of non-native/invasive species, and presence of sensitive plant species (plants with CC of 9-10). A description of CC values is provided in Table 3.

**Table 3 Coefficient of Conservatism (Adapted from Oldham et al. 1995)**

| Coefficient of Conservatism | Rank | Description |
|---|---|---|
| 0 to 3 | Tolerant | Found in a wide variety of plant communities, including disturbed sites. |
| 4 to 6 | Moderately Conservative | Typically associated with a specific plant community but tolerate moderate disturbance. |
| 7 to 8 | Conservative | Typically associated with a plant community in an advanced successional stage that has undergone minor disturbance. |
| 9 to 10 | Highly Conservative | Typically displaying a high degree of fidelity to a specific plant community or a narrow range of synecological parameters. |

### 3.3.2 Habitat-Based Wildlife Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigations was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium staff actively searched for features that may provide specialized habitat for wildlife. These

searches included inspecting tree cavities, overturning logs, rocks and debris, and scanning for scat, browse, sheds, fur, etc. Any evidence of breeding, forage, shelter, or nesting was noted. Species habitat and nesting observations were documented and photographed.

# 4.0 Characterization of Natural Features and Functions

Data acquired through the background information review and field investigations is summarized in the following sections. Based on the information gathered, an assessment of significance has been completed to identify protected natural heritage and hydrologic features on and/or adjacent to the Site.

A summary of the field investigations completed on the Site is presented in Table 4. Representative Site photos are included within the Photo Log in Appendix C. Survey stations/areas are shown in Figure 2.

**Table 4 Summary of Field Investigations**

| Date | Time On Site | Atmospheric Conditions | Observer | Activities |
|---|---|---|---|---|
| 2023-11-14 | 10:00-11:00 | Air Temp: 6°C<br>Wind: 1<br>Noise: 0<br>Sky: Clear | T. Jamieson | Ecological Land Classification, Dynamic Beach / Shoreline Assessment and Delineation, Habitat-based Wildlife Surveys |

*Notes: Wind = Beaufort Wind Scale value (0 = 0-2 kph, 1 = 3-5 kph, 2 = 6-11 kph, 3= 12-19 kph, 4 = 20-30 kph, 5 = 31-39 kph, 6 = 40-50 kph). Noise is reported based on background noise levels: Index 0 – no appreciable effect, 1 – slightly affecting sampling, 2 – moderately affecting sampling, 3 – seriously affecting sampling, 4 – profoundly affecting sampling.*

## 4.1 Landscape Position and Topography

The Site is located within the Mixedwood Plains Ecozone: Lake Simcoe Rideau Ecoregion 6E, which extends southward from a line connecting Lake Huron in the west to the Ottawa River in the east, including Ottawa, Kingston, Peterborough, Barrie, Tobermory, Kitchener, and Toronto. This Ecoregion is characterized by a mixed geology that includes both shallow soil areas such as alvar and bedrock plains, as well as deep soil areas such as the Oak Ridges Moraine. It falls within the Great-Lakes St. Lawrence Forest Region, including deciduous and mixed forests; however, over 50% of the landscape in this Ecoregion is currently in use as agricultural land (Lee, et al., 1998).

The Site is relatively flat at an elevation of 77 m above sea level. Community 3 generally slopes downgradient to the south as it is a dynamic beach environment. No drainage features were observed on the Site.

## 4.2 Vegetation Communities and Species

The vegetation communities on the Site are summarized in Table 5 and are mapped in Figure 2. A list of identified species and representative photos for each community are provided in Appendix D.

**Table 5 Vegetation Communities**

| No. | ELC Code | Community Description | Community Type | S -Rank |
|---|---|---|---|---|
| 1 | CGL | Green Lands | Cultural | SNA |
| 2 | BBO1-2 | Wormwood Gravel Beach | Terrestrial | S2S3 |
| 3 | BBO1 | Mineral Open Beach/Bar | Terrestrial | - |

One provincially rare vegetation community was observed on the Site and adjacent lands (see Table 5). Community 1 is an open sports field with a cut lawn and some trees along the west, north and east property boundaries. Community 2 is a vegetated beach with a boardwalk extending from east to west. Community 3 is a minimally vegetated beach environment along the Lake Ontario shoreline.

One at-risk or provincially rare (S1, S2, S3) vegetation community was identified on the Site-Community 2 (BBO1-2) – Wormwood Gravel Beach. A search for Butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; no Butternut trees were identified. Community 1 contained several ornamental species but was mostly cut lawn. Community 2 had a high abundance of invasive species, such as Spotted Knapweed (*Centaurea stoebe*). Vegetation species of conservation concern are discussed further in Section 4.5.

## 4.3 Wildlife and Wildlife Habitat

The wildlife habitat on the Site is relatively open in each community. There is potential for turtle nesting on the Site as Communities 2 and 3 are open beach environments with exposed granular materials. No other special features were observed on the Site. No incidental wildlife observations occurred during the field visit.

## 4.4 Significant Wildlife Habitat

Guidance documents produced by the MNRF for the identification and evaluation of SWH were used to identify and confirm occurrences of SWH on the Site (MNR, 2000). The Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (Ministry of Natural Resources and Forestry, 2015) apply to the subject property. Information gathered during the background review and field investigations were compared to SWH criteria to evaluate the property for SWH. The results of the SWH assessment are provided in the following sections. Details on species of conservation concern and their protected habitats are provided in Section 4.5.

## 4.5 Species of Conservation Concern

According to the Significant Wildlife Habitat Technical Guide (Ministry of Natural Resources, 2000), Species of Conservation Concern (SCC) include species that are identified as at-risk by COSEWIC or on the SARO list, known rare species (provincially, regionally, locally), and species with populations in known decline. A list of SCC, including SAR, with potential to occur in the general vicinity of the Site has been compiled based on known species' ranges, habitat requirements, and review of background information sources (as listed in Section 3.1). In addition, the list has been augmented with direct field observations from the Study, as detailed in the previous sections. Cambium has employed a habitat-based screening, supplemented with targeted field surveys when necessary, in order to identify suitable habitat for species located on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix B and a discussion of the results is provided below.

No Critical Habitat for aquatic species at risk listed under SARA was identified in Lake Ontario adjacent to the Site.

### 4.5.1 Endangered and Threatened Species

The following (endangered and threatened) species are known to occur in the regional area of the Site, and the habitat types occurring on the Site may support these species. Accordingly, a detailed evaluation of habitat type, size, and availability was completed, supplemented by targeted surveys where required, to assess whether the Site is actively used by any of the species listed below.

The background review identified records for the following additional species within 1 km of the Site: American Eel (*Anguilla rostrata*), Cerulean Warbler (*Setophaga cerulea*), Eastern Meadowlark (*Sturnella magna*), Red-headed Woodpecker (*Melanerpes erythrocephalus*), and Shortnose Cisco (*Coregonus reighardi*). No suitable habitat for these species was documented on the Site. Habitat requirements for each species are presented in Appendix B.

### 4.5.2 Special Concern Species

The Snapping Turtle (*Chelydra serpentina*) prefers slow-moving water with a soft mud bottom and dense aquatic vegetation. Established populations are most often located in ponds, sloughs, shallow bays or river edges and slow streams, or areas combining several of these wetland habitats. Individual Snapping Turtles are somewhat tolerant of degraded conditions (e.g., golf course ponds, irrigation canals), but populations are unlikely to persist in these areas. Suitable nesting habitat is present in Communities 2 and 3 on/adjacent to the Site. No Snapping Turtle was observed during field investigation given the timing of the visit.

The background review identified records for the following additional species within 1 km of the Site: Barn Swallow (*Hirundo rustica*), Canada Warbler (*Cardellina canadensis*), Eastern Wood-pewee (*Contopus virens*), Grasshopper Sparrow (*Ammodramus savannarum*), Northern Brook Lamprey (*Ichthyomyzon fossor*), and Silver Lamprey (*Ichthyomyzon unicuspis* pop. 1). No suitable habitat for these species was documented on the Site. Habitat requirements for each species are presented in Appendix B.

No species of special concern were observed on the Site or adjacent lands. As such, no impact on special concern species is reasonably anticipated, provided the recommendations in

Section 5.0 are implemented. Special concern species will not be discussed further in this report.

### 4.5.3 Other Species of Conservation Concern

The Midland Painted Turtle is federally listed as a special concern species but is not listed provincially on the SARO list or currently afforded species or habitat protection under provincial legislation. This species uses waterbodies such as ponds, marshes, lakes, and slow-moving creeks with soft-bottom and aquatic vegetation. Suitable nesting habitat is present in Communities 2 and 3 on/adjacent to the Site. Midland Painted Turtle was not observed during field investigations which is expected given the timing of the survey.

# 5.0 Impact Assessment and Mitigation Measures

The Site will be going through a redevelopment of land for an undetermined use of the property. Communities 2 and 3 will be protected by the dynamic beach setback. Only Community 1 can be used for development opportunities.

In summary, the following protected features were identified on and adjacent to the Site:

- Lake Ontario

No other natural heritage features protected by provincial policy were confirmed on or adjacent to the Site.

The following sections address potential impacts to protected features identified on and adjacent to the Site that may result from the proposed development and Site alteration. Mitigation measures and best management practices have been recommended to ensure that the integrity of the existing natural features is protected and/or enhanced and that the associated functions are not negatively impacted during or following construction.

## 5.1 Significant Wildlife Habitat

The SWH on the Site will be contained within the dynamic beach setback, including shorebird migratory stopover areas, rare vegetation communities, and potential turtle nesting areas. No SWH is present in Community 1, where the proposed development area is located on the Site.

Although Communities 2 and 3 have the form to be considered rare vegetation communities, they lack the native plant community assemblages and ecological function of the rare open beach communities. An ecological restoration opportunity should be considered for Communities 2 and 3; see Section 6.0 for further details.

## 5.2 Habitat of Endangered and Threatened Species

As detailed in Section 4.5.1, this Study identified suitable habitat on the Site and adjacent lands. However, no species were confirmed to be present on the Site. Potential habitat for endangered / threatened species occurs in Communities 2 and 3 on the Site; these communities are being protected by the dynamic beach setback. Provided the

recommendations outlined herein are adhered to, no negative impacts are anticipated to endangered / threatened species.

## 5.3 Mitigation Measures and Best Management Practices

The mitigation measures and best management practices outlined in Table 6 should be implemented on the Site, to minimize the potential for adverse impacts to natural heritage features and functions on and adjacent to the Site.

**Table 6 Mitigation Measures and Best Management Practice Recommendations**

| Potential Impact | Recommended Best Practice |
|---|---|
| Erosion and Sedimentation | Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas. Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart. This key control measure will help prevent sediment from entering surface water features (i.e., wetlands and the watercourse) in the surrounding landscape. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated. Any observed overland drainage channels originating from Site, that may or may not have arisen as a result of erosion, should be directed to a check dam structure, prior to discharging to off-site areas.<br>Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes. |
| Increase in Runoff - Impervious Surfaces | Runoff from the Site is expected to increase with the introduction of impermeable surfaces (i.e., building roofs, roadways, and walkways) and compacted surfaces with reduced infiltration capacity. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the development. Eavestrough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration. |
| Changes to Water Quality and Quantity | The Stormwater Management Plan prepared for the Site should specifically address potential stormwater-related impacts to water quality and quantity of the surrounding wetlands and watercourse, through quality control measures and a feature-based water balance study. |

| | |
|---|---|
| Wildlife: Reptiles (Disturbance and Harm) | Turtles are particularly vulnerable to construction-related impacts on Sites adjacent to wetlands, watercourses, and waterbodies.<br>Sediment fencing can function as wildlife exclusion fencing. To exclude wildlife from the Site, sediment fencing should be installed around the entire perimeter of the construction area prior to the earlier of May 1 or commencement of Site preparation to keep turtles from entering the construction area. This fencing should be made of heavy-duty sediment fence, staked at regular intervals, trenched-in at least 10-20 cm below surface of the ground, with an above-ground height of at least 60 cm. The sediment fence should be inspected regularly to ensure that it remains in good condition: and any downed areas, rips, or holes should be repaired or replaced immediately. A designated point of ingress/egress should be identified, and a moveable barrier be constructed, to allow for the Site to fully remain enclosed while allowing vehicular access to the Site as needed.<br>The construction area should also be actively inspected for turtles and snakes each day prior to the start of work throughout the duration of construction.<br>As the Site is located adjacent to potential habitat for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to October 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates. Should any nesting turtles be encountered, work should stop immediately, and the turtle should be left to finish nesting undisturbed. The turtle should be photographed, and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – early October). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.<br>If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. |
| Species at Risk (SAR; Threatened and Endangered) | SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC).<br>If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals. |
| Spread of Invasive Species | Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include:<br>1. Revegetate with species native to the local area. |

| | |
|---|---|
| | 2. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.<br>3. Get to know the most common invasive species in the area.<br>4. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property. Equipment and vehicles coming into the work area should be free of soil and seeds that could introduce non-native and invasive species following the Clean Equipment Protocol for Industry: Inspecting and Cleaning Equipment for the Purposes of Invasive Species Prevention (Halloran, 2013)<br>5. Immediately eradicate invasive species if they are observed on the property.<br>6. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage.<br>7. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions.<br>An excellent resource for identifying and controlling invasive species can be found through the Ontario Invasive Plant Council: Home - Ontario Invasive Plant Council (ontarioinvasiveplants.ca) (OIPC, 2022) |
| Anthropogenic Impacts – Domestic Animals | Access of domestic animals to natural areas can have a negative impact on local wildlife due to predation, harassment, and spread of illness and disease. Signage should be posted at trailheads and park areas to keep pets on a leash at all times, and to appropriately dispose of pet waste. Cats should not be allowed to roam freely as they are known to have substantial negative impacts on bird populations. |

# 6.0 Opportunities for Restoration and Enhancement

The beach communities are expected to remain intact following the proposed development. Due to the high abundance of invasive species in these communities, Cambium recommends incorporating additional ecological restoration enhancements in the Site plans. This would include removal of invasive species and actively planting, seeding, and maintaining native plants. Planting a native beach dune grass species would increase bank stability and run-off infiltration while increasing visual appeal. Additional plantings or seeding of native plants around the proposed stormwater management pond will improve species diversity and provide cover, shelter and nesting habitat for bird species. Recommended enhancement areas are shown on Figure 3.

Cambium staff can assist with providing expertise on species selection to ensure species survival based on Site suitability and soil characteristics. Cambium can provide a Shoreline Ecological Restoration Plan under separate cover if requested by the client.

# 7.0 Policy Conformity

## 7.1 Provincial Policies

Based on the key natural heritage and/or hydrologic features identified on or adjacent to the Site and the findings of the field investigations detailed herein, the proposed development of the Site is in conformity with the PPS. Conformity with applicable natural heritage policy is summarized in Table 7. Note that natural heritage and hydrologic feature types not relevant to the development application have been intentionally omitted from the tables below.

**Table 7 PPS Policy Conformity Summary**

| Natural Heritage / Hydrologic Feature | On Site | On Adjacent Lands | Meets Associated Policy |
|---|---|---|---|
| Significant Wetland in Ecoregions 5E, 6E and 7E or in the Canadian Shield north of Ecoregions 5E, 6E and 7E | No | No | N/A |
| | Explanation: N/A | | |
| Significant Coastal Wetland | No | No | N/A |
| | Explanation: N/A | | |
| Coastal Wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b) | No | No | N/A |
| | Explanation: N/A | | |
| Significant Woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River) | No | No | N/A |
| | Explanation: N/A | | |
| Significant Valleylands in Ecoregions 6E and 7E (excluding islands | No | No | N/A |
| | Explanation: N/A | | |

| Natural Heritage / Hydrologic Feature | On Site | On Adjacent Lands | Meets Associated Policy |
|---|---|---|---|
| in Lake Huron and the St. Marys River) | | | |
| Significant Wildlife Habitat (including habitat of special concern species) | Potential | Potential | 2.1.5 d); 2.1.8 |
| | Explanation: No construction or Site alteration is proposed within SWH communities. Provided the recommendations outlined herein are adhered to, no impacts to this feature are anticipated to result from the proposed development. | | |
| Habitat of Threatened and Endangered Species | Potential | Potential | 2.1.7 |
| | Explanation: In accordance with provincial and federal requirements, no negative impacts to threatened or endangered species or their habitats are anticipated in relation to the proposed development provided the recommendations in this report are implemented. | | |
| Areas of Natural and Scientific Significance | No | No | |
| | Explanation: N/A | | |
| Fish Habitat | No | Yes | 2.1.6; 2.1.8 |
| | Explanation: No in-water construction or Site alteration is proposed within Lake Ontario. Provided the recommendations outlined herein are adhered to, no impacts to this feature are anticipated to result from the proposed development. | | |

## 7.2 Municipal Policies

The proposed development is located within a designated Settlement Area. No construction or Site alteration is proposed within the areas mapped ‘Natural Hazard’ or zoned ‘Environmental Constraint’; these areas are located along the southern Site boundary, which is associated with Lake Ontario. No additional features that would warrant designation as natural hazards or environmentally sensitive features were identified during the field investigations.

## 7.3 Conservation Authority Policies

The proposed development meets the intent of the following GRCA policies:

- 2.0.2 (1) – No development is proposed within the dynamic beach and shoreline flood hazard areas on the Site.
- 2.2.1 - Provided the recommendations outlined herein are adhered to, no impacts to this feature are anticipated to result from the proposed development.
- 2.4.1 - Provided the recommendations outlined herein are adhered to, no impacts to this feature are anticipated to result from the proposed development.
- 2.6.1 - Provided the recommendations outlined herein are adhered to, no impacts to this feature are anticipated to result from the proposed development.

# 8.0 Summary of Recommendations

The following recommendations are provided for the proposed development:

1. All required approvals and permits should be obtained prior to the commencement of any Site alteration / construction activities.
2. All development setbacks identified herein should be included on all future Site Plans.
3. Tree removal should occur from October 1 to March 31, outside of the combined breeding bird season (April 15 to August 30) and active bat season (April 1 – September 30).
4. Prior to any construction activities taking place, it is essential that perimeter sediment fencing be installed around construction areas (outside of the dynamic beach setback). Fencing should be properly keyed into the ground and securely fastened to vertical supports spaced ≤ 2 m apart.
5. Measures to increase infiltration of run-off from these surfaces should be encouraged and, where possible, included in the Site Plan for the development. Eavestrough downspouts should be directed to vegetated areas (such as lawn, or gardens) and not onto hardened surfaces, to encourage infiltration.
6. The Stormwater Management Plan prepared for the Site should specifically address potential stormwater-related impacts to water quality and quantity of the surrounding wetlands and watercourses, through lot level quality and quantity controls.
7. All sediment fencing should be regularly maintained and kept in good working condition, until the area has been stabilized and/or successfully revegetated.
8. Construction activities that require earthworks (e.g., grading, excavation, etc.) should be scheduled to avoid dates of heavy rainfall events and times of high runoff volumes.
9. As the Site is located adjacent to potential habitat for turtles, workers should be aware of the nesting season for turtles, which extends from May 15 to October 15. All stockpiled materials should be kept inside the exclusion fencing area and ideally should be covered and well secured around the base, to prevent turtles from nesting in loose substrates.

Should any nesting turtles be encountered, work should stop immediately, and the turtle should be left to finish nesting undisturbed. The turtle should be photographed, and the nest marked to ensure it is not disturbed during construction, or until eggs have hatched (late August – September). If a nest is laid in a stockpile or other area that requires disturbance, Cambium should be contacted to determine if the nest can be relocated.

10. Nesting birds and their nests, eggs, and young are protected under the *Migratory Birds Convention Act, 1994*. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 15 to August 15 in the local area (as per Environment and Climate Change Canada Guidelines).
11. If vegetation clearing is to occur between April 15 and August 15, the vegetation should be investigated by a qualified biologist to confirm if any active nests are present, prior to Site alteration. Vegetation clearing can proceed provided there are no active nests. If active nests are confirmed, the nests should be left undisturbed until young have fledged or the nest is determined to be inactive.
12. SAR observations, including most species of snakes and turtles, should be reported to the Natural Heritage Information Centre (NHIC). If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR should not be handled by unauthorized individuals.
13. Invasive species are becoming problematic throughout Ontario and can adversely impact our natural landscapes, including wetlands, woodlands, and watercourses. Best management practices to reduce the spread of invasive species include:
    A. Revegetate with species native to the local area.
    B. Request fill and compost from reputable sources that are conscious of the potential for the spread of invasive species via these media.
    C. Get to know the most common invasive species in the area.
    D. Brush off or clean any shoes, boots and equipment that have encountered invasive species before returning to the property.

E. Immediately eradicate invasive species if they are observed on the property.

F. Do not compost invasive species; put them in plastic bags and dispose of them in the garbage.

G. Do not dispose of lawn or garden clippings in the forest or wetlands to avoid species introductions.

# 9.0 Closing

In closing, potential negative impacts associated with the proposed development and Site alteration can be appropriately minimized, provided that the recommendations outlined in Section 8.0 are followed. The information presented herein demonstrates that the proposed development can be carried out in a way that will not adversely impact natural heritage and hydrologic features and function identified on or adjacent to the subject Site. Furthermore, the proposed development complies with applicable provincial policy.

Respectfully submitted,

**Cambium Inc.**

Matthew Wheeler, B.A. Hons.
Senior Ecologist / Project Manager

*P:\18200 to 18299\18288-002 Town of Cobourg - EIS - 117 Durham Street, Cobourg\Deliverables\REPORT - EIS\Draft\2023-11-20 RPT EIS - 117 Durham St, Cobourg (18288-002).docx*

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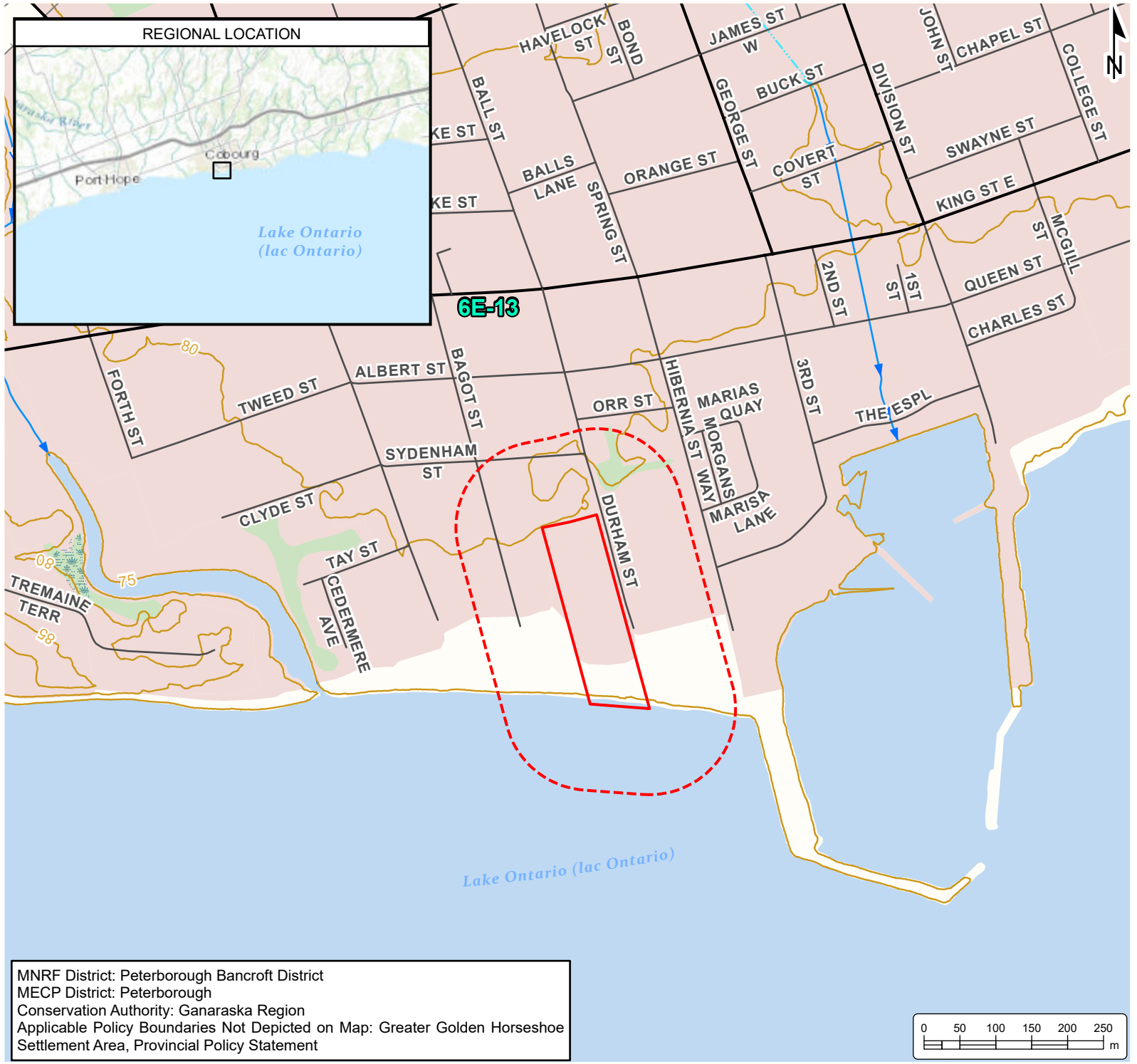
# 11.0 Glossary of Terms

ANSI: Area of Natural and Scientific Interest
ARA: Aquatic Resources Area
ARA: Aggregate Resources Act
AS: Agricultural System
ATK: Aboriginal Traditional Knowledge
BMA: Bear Management Area
BMP: Best Management Practice
CA: Conservation Authority
CEAA: Canadian Environmental Assessment Act/Agency
CFA: Canadian Forestry Association
CFIP: Community Fisheries Involvement Program
CFS: Canadian Forestry Service
CHU: Critical Habitat Unit
CH: Cultural Heritage
CLI: Canada Land Inventory
CLU: Crown Land Use
COSSARO: Committee on the Status of Species at Risk in Ontario
CR: Conservation Reserve
CWIP: Community Wildlife Involvement Program
CWS: Canadian Wildlife Service
DFO: Fisheries and Oceans Canada
EA: Environmental Assessment
EAA: Environmental Assessment Act
EAB: Emerald Ash Borer
EBR: Environmental Bill of Rights
EIA: Environmental Impact Assessment
EIS: Environmental Impact Study/Statement
ELC: Ecological Land Classification System
ELUP: Ecological Land Use Plan
END: Endangered species
EPA: Environmental Protection Act
ER: Environmental Registry
ESA: Endangered Species Act (2007)
ESA: Environmentally Sensitive Area
ESC: Erosion and Sediment Control
GIS: Geographic Information System
GLSL: Great Lakes – St. Lawrence
GPGGH: Growth Plan for the Greater Golden Horseshoe
GPS: Global Positioning System
HSA: Habitat Suitability Analysis
HIS: Habitat Suitability Index
KHA: Key Hydrologic Areas
KHF: Key Hydrologic Features
KNHF: Key Natural Heritage Features
LCFSP: Licence to Collect Fish for Scientific Purposes
LIO: Land Information Ontario
LRIA: Lake and Rivers Improvement Act
LUP: Land Use Permit or Plan
MA: Management Area
MAFA: Moose Aquatic Feeding Area
MCEA: Municipal Class Environmental Assessment
MECP: Ontario Ministry of Environment, Conservation and Parks
MNDMRF: Ontario Ministry of Natural Resources and Forestry
NER: Natural Environment Report
NHIC: Natural Heritage Information Centre
NHIS: Natural Heritage Information System
NHS: Natural Heritage System
OBM: Ontario Base Map
OFIS: Ontario Fisheries Information System
OLI: Ontario Land Inventory
OMAFRA: Ontario Ministry of Agriculture, Food and Rural Affairs
OWES: Ontario Wetland Evaluation System
PPS: Provincial Policy Statement (2014)
PSW: Provincially Significant Wetland
RLUP: Regional Land Use Plan
RMP: Regional Management Plan
R.P.F.: Registered Professional Forester
SAR: Species at Risk
SARO: Species at Risk in Ontario
SC: Special Concern species

F&W: Fish and Wildlife
FA: Fisheries Act (Federal)
FEC: Forest Ecosystem Classification
FMP: Forest Management Plan
FRI: Forest Resources Inventory
FWCA: Fish and Wildlife Conservation Act
GGH: Greater Golden Horseshoe
GHP: General Habitat Protection
SWH: Significant Wildlife Habitat
SWM: Stormwater Management
THR: Threatened species
TOR: Terms of Reference
TPP: Tree Preservation Plan
WIA: Woodlands Improvement Act
WMU: Wildlife Management Unit

# Appended Figures




MNRF District: Peterborough Bancroft District
MECP District: Peterborough
Conservation Authority: Ganaraska Region
Applicable Policy Boundaries Not Depicted on Map: Greater Golden Horseshoe Settlement Area, Provincial Policy Statement

# ENVIRONMENTAL IMPACT STUDY

THE CORPORATION OF
THE TOWN OF COBOURG
117 Durham Street, Town of Cobourg
Northumberland County, Ontario

**LEGEND**

- Major Road
- Minor Road
- Railway
- Contours (5m Interval)
- Watercourse, Permanent
- Watercourse, Intermittent
- Site
- Adjacent Lands (120m)
- Ecodistrict
- Water Area
- Wetland Unevaluated
- Wooded Area
- Built Up Area

**Notes:**
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www.cambium-inc.com


## LANDSCAPE SETTING AND POLICY AREAS

| | | | |
|---|---|---|---|
| Project No.: 18288-002 | | Date: December 2023 | Rev.: |
| Scale: 1:7,500 | | Projection: NAD 1983 UTM Zone 17N | |
| Created by: NLB | Checked by: MW | Figure: 1 | |

O:\GIS\MXDs\18200-18299\18288-002 Town of Cobourg - EIS - 117 Durham Street Cobourg\2023-12-05 EIS.aprx


| Community Number | Code Description |
|---|---|
| 1 | CGL Green Lands |
| 2 | BBO1-2 Wormwood Gravel Beach |
| 3 | BBO1 Mineral Open Beach/Bar |

# ENVIRONMENTAL IMPACT STUDY

THE CORPORATION OF
THE TOWN OF COBOURG
117 Durham Street, Town of Cobourg
Northumberland County, Ontario

**LEGEND**

- Site
- Adjacent Lands (120m)
- Vegetation Communities

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## NATURAL HERITAGE FEATURES AND ECOLOGICAL SURVEY STATIONS

| | | |
|---|---|---|
| Project No.: 18288-002 | Date: December 2023 Rev.: | |
| Scale: 1:3,000 | Projection: NAD 1983 UTM Zone 17N | |
| Created by: NLB | Checked by: MW | Figure: 2 |

O:\GIS\MXDs\18200-18299\18288-002 Town of Cobourg - EIS - 117 Durham Street Cobourg\2023-12-05 EIS.aprx


# ENVIRONMENTAL IMPACT STUDY

THE CORPORATION OF
THE TOWN OF COBOURG
117 Durham Street, Town of Cobourg
Northumberland County, Ontario

## LEGEND

- Dynamic Beach Setback
- 100 Year Flood Level
- Developable Area (1.6 ha)
- Site
- Adjacent Lands (120m)

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## NATURAL HERITAGE CONSTRAINTS

| | | | |
|---|---|---|---|
| Project No.: 18288-002 | | Date: December 2023 | Rev.: |
| Scale: 1:3,000 | | Projection: NAD 1983 UTM Zone 17N | |
| Created by: NLB | Checked by: MW | Figure: 3 | |

O:\GIS\MXDs\18200-18299\18288-002 Town of Cobourg - EIS - 117 Durham Street Cobourg\2023-12-05 EIS.aprx

# Appendix A
# Correspondence

**From:** Matthew Wheeler <Matthew.Wheeler@cambium-inc.com>
**Sent:** Tuesday, November 21, 2023 12:01 PM
**To:** Vanessa Reusser <vreusser@cobourg.ca>
**Cc:** File <file@cambium-inc.com>; Courtney Stadtke <Courtney.Stadtke@cambium-inc.com>
**Subject:** RE: Terms of Reference, Environmental Impact Study - 117 Durham Street, Cobourg (18288-002)

Hello Vanessa

As you are aware, Cambium has been retained by the Town of Cobourg to complete an Environmental Impact Study (EIS) for a property located at 117 Durham Street Cobourg (the Site, see screen shot below). Cambium has initiated discussions with the Town to discuss the scope of work to support this EIS. Cambium will evaluate the natural heritage constraints on and adjacent to the Site in consideration of its development. The Site is occupied by an athletics track in the northern portion and a boardwalk along the shoreline of Lake Ontario. This terms of reference (ToR) defines the scope of work required to develop an EIS report for the Site. Currently there are no conceptual development plans for the Site.


1 – **Background Review/Agency Consultation**

Cambium will access readily available documents and information about the Site from private, municipal, provincial and federal sources, as applicable. Information obtained will include but will not be limited to: land use of the subject and adjacent properties; geological and soils records; watercourses and surface drainage mapping; fish community records; species at risk records; and, the location of any provincially identified features such as wetlands, woodlands, and/or Areas of Natural and Scientific Interest (ANSI). Ministry consultation may include Northern Development, Natural Resources and Forestry (NDMNRF) and/or the Ministry of Environment, Conservation, and Parks (MECP), as applicable. This information will be used to inform the subsequent field studies and associated reporting. Confirmation of the ToR is completed under Phase 1.

2 – **Field Studies**

Subject to the approved ToR, the following field investigations will be completed:

| Activity | **Details** | **Timing** |
|---|---|---|
| Vascular Plant Survey and Community Classification | One-season vegetation survey; Ecological Land Classification (ELC) System for Southern Ontario; Communities will be evaluated for their sensitivity, rarity, and botanical quality | June to September |
| Dynamic Beach / Shoreline Assessment and Delineation | Using the principles of the ELC, the extent of the dynamic beach will be delineated based on observed site conditions. An aquatic assessment of the nearshore area will be completed. | June to September |
| General Wildlife Habitat Surveys | Visual encounter surveys for evidence of breeding, foraging, sheltering, nesting, and/or movement | During all field investigations |

**3 – Report and Figures**

Our EIS report will include:

- An overview of applicable natural heritage policy and regulation;
- A summary of the background information collected;
- A summary of field investigations carried out, and associated protocols;
- Descriptions of natural heritage and hydrologic features identified on and adjacent to the Site;
- A habitat-based screening for species of conservation concern (including species at risk);
- A list of additional field investigations required to address regulatory requirements, where applicable (e.g., targeted surveys for species at risk where sensitive habitat is identified through the screening process);
- An overview of the proposed development and site alteration;
- Analysis of impacts, and discussion of mitigation, restoration, and/or compensation measures required to address study requirements. Additional best management practices and/or enhancement measures may be recommended, as appropriate;
- An evaluation and summary of conformity with applicable provincial, municipal, and Conservation Authority natural heritage policy;
- A comprehensive list of recommendations, for ease of transfer to Site Plan and Draft Plan agreements;

- Detailed mapping of survey stations/areas, natural features, key species observations, and field-verified boundaries; and,
- Detailed mapping of constraint areas including development setbacks and buffers.

Cambium would like to request comment on this ToR, and confirmation of approval as appropriate. Please do not hesitate to contact me with any questions regarding this project.

Kind regards, Matt Wheeler

**Matthew Wheeler**
Project Manager/Senior Ecologist
**Cambium - Kingston**
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Environmental | Building Sciences | Geotechnical | Construction Quality Verification

# Appendix B

# Species of Conservation Concern Screening

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| **Birds** | | | | | | | | |
| Bald Eagle | *Haliaeetus leucocephalus* | No Status | SC | S2N,S4B | The Bald Eagle is a bird of prey with a white head, neck and tail, a massive bright yellow beak, powerful legs, and a wingspan of over 2 m. It nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. These nests are usually on islands in freshwater lakes or in large trees such as the pine and poplar. During the winter, they may also be found near open bodies of water that do not freeze (1). | No | Known to occur in the general area | No further consideration required |
| Bank Swallow | *Riparia riparia* | THR | THR | S4B | The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2). | No | Known to occur in the general area | No further consideration required |
| Barn Swallow | *Hirundo rustica* | THR | THR | S4B | The Barn Swallow is a mid-sized songbird with steel-blue backs and wings, glossy in males, and a line of white spots across its upper tail. It lives in a variety of open habitats for foraging, such as grassy fields, pastures, certain agricultural crops, shorelines, cottage areas, wetlands, or subarctic tundra (2). They prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud, typically attached to horizontal beams or vertical walls underneath an overhang (1). | No | Known to occur in the general area | No further consideration required |
| Black Tern | *Chlidonias niger* | No Status | SC | S3B | The Black Tern is a small waterbird with a forked tail, straight pointed bill, slender shape, and black head during breeding season. It builds floating nests in loose colonies in shallow marshes, with a preference for cattails. They breed primarily in the marshes along the edges of the Great Lakes, but may also use wetlands further north if suitable (1). | No | Known to occur in the general area | No further consideration required |
| Bobolink | *Dolichonyx oryzivorus* | THR | THR | S4B | The Bobolink is a mid-sized songbird of tan colour with black stripes, except for males during summer breeding season who are black with a white back and yellow collar. It prefers tall, grassy meadows, hayfields and some croplands, and feeds (largely on insects) on the ground in dense grasses (1). It tends to nest in forage crops: hayfields and pastures dominated by species including clover, bluegrass, and broadleaf plants (2). | No | Known to occur in the general area | No further consideration required |
| Canada Warbler | *Cardellina canadensis* | THR | SC | S4B | The Canada Warbler is a small songbird with bright yellow underparts and bluish-grey back and tail (1). It can be found in a variety of forest types, but is most abundant in moist, mixed forests with a well-developed, dense shrub layer. Nests are usually located on or near the ground on mossy logs, and along stream banks (3). | No | Known to occur in the general area | No further consideration required |
| Cerulean Warbler | *Setophaga cerulea* | END | THR | S3B | The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey (4). | No | Known to occur in the general area | No further consideration required |
| Chimney Swift | *Chaetura pelagica* | THR | THR | S4B,S4N | The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| Common Nighthawk | *Chordeiles minor* | THR | SC | S4B | The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and and large eyes. Its plumage of dark brown with black and white specks blends with its roost site. It is typically found in open areas such as gravel beaches, rock outcrops and burned woodlands, that have little to no ground vegetation. This species can also be found in highly disturbed locations such as clear cuts, mine tailing areas, cultivated fields, urban parks, gravel roads, and orchards (1). | No | Known to occur in the general area | No further consideration required |
| Eastern Meadowlark | *Sturnella magna* | THR | THR | S4B | The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (1). | No | Known to occur in the general area | No further consideration required |
| Eastern Wood-Pewee | *Contopus virens* | SC | SC | S4B | The Eastern Wood-pewee is a species of 'flycatcher', a bird that eats flying insects. It grows to approximately 15 cm, has greyish-olive upper parts and pale bars on its wings. This species lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation (1). It typically creates nests on tree branches 2-12 m in height (2). | No | Known to occur in the general area | No further consideration required |
| Evening Grosbeak | *Coccothraustes vespertinus* | SC | SC | S4B | The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1). | No | Known to occur in the general area | No further consideration required |
| Golden Winged Warbler | *Vermivora chrysoptera* | THR | SC | S4B | The Golden-winged Warbler is a small songbird with distinctive yellow wing patches and patches behind their eyes. It inhabits early successional habitat of old fields and favour areas where trees are spread out or forest edges to use for perching, singing, and searching for food. They seem to prefer regeneration zones with young shrub growth, surrounded by mature forest, locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas for their breeding sites; often frequenting clusters of herbaceous plants and low bushes (1). | No | Known to occur in the general area | No further consideration required |
| Grasshopper Sparrow | *Ammodramus savannarum* | SC | SC | S4B | The Grasshopper Sparrow is a small songbird with a streaked back, a white stripe down the center of its crown, a flattish head, and a conical beak. It inhabits open grasslands and prairies with well-drained soil, preferring areas that are sparsely vegetated. It will also nest in hayfields and pastures, as well as alvars and occasionally grain crops such as barley (1). | No | Known to occur in the general area | No further consideration required |
| King Rail | *Rallus elegans* | END | END | S2B | The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1). | No | Known to occur in the general area | No further consideration required |
| Least Bittern | Ixobrychus exilis | THR | THR | S4B | The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. Although Least Bitterns usually nest in larger marshes territorial individuals have been found in marshes as small as 0.4 ha. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (3). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| Louisiana Waterthrush | *Parkesia motacilla* | THR | THR | S3B | The Louisiana Waterthrush is a large wood warbler with brown upper parts, cream-coloured breasts and flanks with dark streaks, and a long bill. It is typically found along fast moving streams and creeks, in deeply forested ravines. It nests along stream banks, in the roots of fallen trees, and under logs and other large woody debris. Although less frequently, the Louisiana Waterthrush has been known to inhabit heavily wooded, deciduous swamps and open water areas, In Ontario, its breeding ground is mostly found in woodlands along Lake Erie and along the Niagara Escarpment (1). | No | Known to occur in the general area | No further consideration required |
| Northern Bobwhite | *Colinus virginianus* | END | END | S1 | The Northern Bobwhite, a small quail, has a round body and stubby tail. They have a head pattern described as a bright white eyebrow and throat patch divided by a black mask. This species is found in open grasslands, meadows, abandoned farmlands and savannahs throughout the year, occasionally foraging in forested areas during harsh winter conditions (1). They require an early successional habitat although in Ontario, they are now usually associated with cultivated lands (2). | No | Known to occur in the general area | No further consideration required |
| Olive-sided Flycatcher | Contopus cooperi | THR | SC | S4B | The Olive-sided Flycatcher is a medium-sized songbird with olive colouring, often seen perching on top of tall trees waiting to catch their prey. It prefers open areas along natural mature forest edges, forest edges near natural openings such as rivers or swamps, human-made openings, or burned forest openings with numbers of dead trees. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands, in Ontario often nesting in White and Black Spruce, Jack Pine, and Balsam Fir (1). | No | Known to occur in the general area | No further consideration required |
| Piping plover | *Charadrius melodus* | END | END | S1B | The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1). | No | Known to occur in the general area | No further consideration required |
| Red-headed Woodpecker | *Melanerpes erythrocephalus* | END | END | S4B | The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well a strong bill. The species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (1). | No | Known to occur in the general area | No further consideration required |
| Short-eared owl | *Asio flammeus* | SC | SC | S2N,S4B | The Short-eared Owl has a large round head with small tufts of feathers, long wings, a short tail, and cryptic colouring of brown streaks. This species is found in scattered pockets across the province where suitable open habitat, including grasslands, tundra, peat bogs and marsh, can be found in sufficient quantities. Adults build nests on the ground in grassy areas and occasionally agricultural fields (1). The main factor influencing their choice in habitat is believed to be an abundance of their food source, primarily rodents and other small mammals (2). | No | Known to occur in the general area | No further consideration required |
| Wood Thrush | *Hylocichla mustelina* | THR | SC | S4B | The Wood Thrush is a medium-sized songbird of around 20 cm with rusty brown coloured upper parts and white underparts with large dark spots. It breeds in deciduous and mixed forests with moderate understories, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material. They prefer moist stands of trees with well-developed undergrowth and tall trees for perches (1). | No | Known to occur in the general area | No further consideration required |
| Yellow Rail | *Coturnicops noveboracensis* | SC | SC | S4B | The Yellow Rail is a small, quail-like marsh bird with a short yellow or black bill, short tail, with yellowish and black streaks on its back and white wing patches. This species is mainly found in the Hudson Bay Lowlands region, and is only found in localized marshes in southern Ontario. It is a secretive bird that lives deep within the reeds, sedges, and marshes of shallow wetlands which nest on the ground in areas that have an overlying mat of dry vegetation that can be used for nest building (1). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| **Fish** | | | | | | | | |
| American Eel | *Anguilla rostrata* | No Status | END | S1? | The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2). | Yes: adjacent lands only | Known to occur in the general area | No further consideration required |
| Bridle Shiner | *Ntoropis bifrenatus* | SC | SC | S2 | The Bridle Shiner is a small minnow with a slender body growing up to six centimetres in length. It has a small mouth which extendas back to the lower edge of the eye. Adults are generally silvery, often with green-blue iridescence. The surface of the body is straw-coloured while the underside is silvery-white. Bridle Shiners also have a dark stripe that extends along the side of the body, but may be faint and difficult to see. They prefer clear, unpolluted streams, rivers and lakes with an abundance of aquatic vegetation. They prefer warm water habitats where the bottom is either sand, silt, or organic debris. (2) | No | Known to occur in the general area | No further consideration required |
| Grass Pickerel | *Esox americanus* | SC | SC | S3 | Like other members of the pike family, the Grass Pickerel has a long, cylindrical body with a long snout and forked tail. Colouration may vary, but often consists of several thin, dark, wavy vertical bars along the sides. The fins are dusky to yellow-green. Adults have a dark bar extending below the eye. Grass Pickerel are foujnd in wetlands, pond, slow moving streams and shallow bays of larger lakes with warm, shallow, clear water and abundant aquatic vegetation. In Ontario, Grass Pickerel is found in coastal wetlands in the Great Lakes and tributaries of Lake St. Clair, Lake Erie, Lake Huron, the Niagara River, Lake Ontario and the St. Lawrence River, and inland in the Severn River system (2). | No | Known to occur in the general area | No further consideration required |
| Lake Sturgeon | *Acipenser fulvescens* | No Status | END | S2 | The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1). | Yes: adjacent lands only | Known to occur in the general area | No further consideration required |
| Northern Brook Lamprey | *Ichthyomyzon fossor* | SC | SC | S3 | The Northern Brook Lamprey is a small, elongate fish growing up to 16 cm long with a round, jawless mouth, sevel gill openings, and no pectoral or pelvic fins. This species has a larval stage, in which they require soft substrates for burrowing and typically use slow-moving portions of coolwater streams, and an adult stage, in which they are more typically associated with fast flowing ripples in coolwater strams with rock or gravel bottoms (1). | No | Known to occur in the general area | No further consideration required |
| River Redhorse | *Moxostoma carinatum* | SC | SC | S2 | The River Redhorse is large and thick-bodied, growing up to 80 cm, with a flat-topped head and prominent snout. Its tail fin is tinted red, its belly is white, its back is brown or olive coloured, and its sides are yellowish green or coppery. It can be found in medium to large sized rivers with substantial flows. Adult River Redhorses migrate in spring from deeper, slower moving pools to shallow riffle-run habitats with coarse substrate and faster flow (1). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| Silver Lamprey (Great Lakes - Upper St. Lawrence River population) | *Ichthyomyzon unicuspis* | SC | SC | S3 | The Silver Lamprey is an eel-shaped fish growing from 9 to 39 cm long, with a sucking disc mouth and no jaws or paired fins. They can be differed from other lamprey species based on fin shapes and teeth arrangements. Their habitat requirements include clear water, the availability of fish hosts, and relatively clean beds of sand or organic debris (1). | Yes: adjacent lands only | Known to occur in the general area | No further consideration required |
| **Herptiles** | | | | | | | | |
| Blanding's Turtle | *Emydoidea blandingii* | END | THR | S3 | Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1). | No | Known to occur in the general area | No further consideration required |
| Eastern Musk Turtle | *Sternotherus odoratus* | SC | SC | S3 | The Eastern Musk Turtle is small with a narrow carapace, a dark brown body and two light stripes on each side of their head (5). It is a small freshwater turtle found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield within which they burrow into overwinter. Nesting sites vary, but must be close to the water and exposed to direct sunlight (1). | No | Known to occur in the general area | No further consideration required |
| Midland Painted Turtle | *Chrysemys picta marginata* | SC | - | S4 | The Midland Painted Turtle has a olive to black carapace with red or dark orange markings on the marginal scutes, as well as red and yellow stripes on the head and neck. The species uses a variety of waterbodies including, ponds, marshes, lakes and slow-moving creeks with a soft bottom and an abundance of basking sites and aquatic vegetation. This species usually hibernates on the bottom of waterbodies (5). | Yes: on-site and adjacent lands | Known to occur in the general area | No further consideration required |
| Northern Map Turtle | *Graptemys geographica* | SC | SC | S3 | The Northern Map Turtle is a medium sized turtle identified by its carapace's map contour-like patterning. It lives in larger lakes and rivers, requiring high water quality to support their primary prey species: molluscs. This species can often be seen in large groups basking together on rocks and logs. In the winter, the Northern Map Turtle can be found hibernating on the bottom of slow-moving rivers (1). | No | Known to occur in the general area | No further consideration required |
| Snapping Turtle | *Chelydra serpentina* | SC | SC | S3 | The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (5). It spends the majority of its life in water, preferring shallow water with soft mud and leaf litter, and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (1). | Yes: on-site and adjacent lands | Known to occur in the general area | No further consideration required |
| Spotted Turtle | *Clemmys guttata* | END | END | S2 | The Spotted Turtle is named after the distinct yellow spots on its carapace. The species is semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation. This species usually hibernates in wetlands or seasonally wet areas with structures such as overhanging banks, hummocks, tree roots, or aquatic animal burrows (1). | No | Known to occur in the general area | No further consideration required |
| Eastern Milksnake | *Lampropeltis triangulum* | SC | NAR | S4 | The Eastern Milksnake's colouration is grey or tan with reddish alternating blotches otlines in black along its back and sides (5). It has recently been delisted from being a species at risk in Ontario (1). This species tends to use open habitats such as rocky outcrops, fields and forest edges. The preferred prey of milksnakes are mice, small rodents, and ground nesting birds which are amply found in and surrounding agricultural outbuildings. The milksnake is secretive and is not likely to be encountered during the day or at night while hunting (5). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| Eastern Ribbonsnake | *Thamnophis sauritus* | SC | SC | S4 | The Eastern Ribbonsnake is slender with three bright yellow stripes running down its back and sides and a white crescent in front of each eye. This snake is usually found close to water as they are strong swimmers, often fleeing predators by diving into shallow water. It prefers wetland habitats where its prey species, frogs and small fish, are abundant. Over winter, they congregate in underground burrows or rock crevices to hibernate (1). | No | Known to occur in the general area | No further consideration required |
| Western Chorus Frog | *Pseudacris triseriata* | THR | - | S3 | The Western Chorus Frog is small with a dark stripe running through its eye and a light stripe underneath (5). It is primarily a lowland terrestrial species that requires access to terrestrial and aquatic habitats in close proximity to one another. Relying on marshes and wooded wetlands adjacent to forested habitats, this species also requires isolated, predator free pools for breeding. Temporary pools, such as vernal pools in wooded areas, are preferred. This species hibernates terrestrially in a variety of environments, including leaf litter, wood debris, and vacant animal burrows (2). | No | Known to occur in the general area | No further consideration required |
| **Invertebrates** | | | | | | | | |
| Monarch Butterfly | *Danaus plexippus* | SC | SC | S2N,S4B | The Monarch is an orange and black butterfly with small white spots and a wingspan of around 10 cm. It relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers (1). | No | Known to occur in the general area | No further consideration required |
| West Virginia White | *Pieris virginiensis* | No Status | SC | S3 | The West Virginia White is a small, dingy white butterfly. This species is found in moist deciduous woods, and requires a supply of toothwort, a small, spring-blooming plant, which provides the only source of food for its larvae. The West Virginia White is found mostly in the central and southern parts of Ontario, but its range extends north to Manitoulin and St. Joseph islands (1). | No | Known to occur in the general area | No further consideration required |
| Yellow-banded Bumble Bee | *Bombus terricola* | SC | SC | S3S5 | The Yellow-banded Bumble Bee is a medium-sized bumble bee with a distinct yellow and black abdominal band pattern found on its queens, males, and workers. This species is a forage and habitat generalist, able to use a variety of nectaring plants and environmental conditions. It can be found in mixed woodlands, particularly for nesting and overwintering, as well as a variety of open habitat such as native grasslands, farmlands and urban areas. The Yellow-banded Bumble Bee ranges from the Mixedwood Plains of southern Ontario to the Hudson Bay Lowlands in the north (1). | No | Known to occur in the general area | No further consideration required |
| Rainbow | *Villosa iris* | SC | SC | S1 | The Rainbow mussel shell exterior is yellow, green, or brown with many brokedn dark green lines while its interior is iridescent coloured. It has an elongated oval shape and grows up to 8 cm long. This species prefers small or medium rivers with a moderate to strong current. The Rainbow mussel is typically found in or near riffle areas in shallow (<1 m) water with either asandy, rocky, or gravel bottom (2). | No | Known to occur in the general area | No further consideration required |
| **Mammals** | | | | | | | | |
| Tri-colored Bat | *Perimyotis subflavus* | END | END | S3? | The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6). | No | Known to occur in the general area | No further consideration required |
| Eastern Small-footed Myotis | *Myotis leibii* | No Status | END | S2S3 | The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1). | No | Known to occur in the general area | No further consideration required |

**APPENDIX B: Species at Risk Screening - County of Northumberland**

| COMMON NAME | SCIENTIFIC NAME | Federal | Provincial | | SPECIES DESCRIPTION AND HABITAT REQUIREMENTS | SUITABLE HABITAT | SPECIES OBSERVATIONS | ASSESSMENT |
|---|---|---|---|---|---|---|---|---|
| | | SARA | SARO | S-RANK | | | | |
| Little Brown Myotis | *Myotis lucifugus* | END | END | S4 | The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1). | No | Known to occur in the general area | No further consideration required |
| Northern Myotis | *Myotis septentrionalis* | END | END | S3 | The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1). | No | Known to occur in the general area | No further consideration required |
| **Trees, plants, fungi and lichens** | | | | | | | | |
| American Ginseng | *Panax quinquefolius* | END | END | S2 | American Ginseng is a perennial plant which grows up to 60 centimetres in height. The leaves typically have five leaflets arranged in a whorl at the end of the leaf stem. The root looks like a gnarly parsnip. The flowers are an inconspicuous green-white in colour, but the berries are bright red and arranged in a cluster. In Ontario, the American Ginseng typically grows in rich, moist, and mature deciduous woods dominated by Sugar Maple, White Ash, and American Basswood. It typically grows in deep, nutrient rich soil over limestone or marble bedrock (1). | No | Known to occur in the general area | No further consideration required |
| Black Ash | *Fraxinus nigra* | No status | END | S4 | The Black Ash is a smaller-sized tree with a narrow crown, light grey and scaly bark, and green, oval leaflets on a central stalk. It grows everywhere in Ontario except for the far north, preferring moist climates and soils such as swampy woodlands or bogs (1). | No | Known to occur in the general area | No further consideration required |
| Butternut | *Juglans cinerea* | END | END | S2? | The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1). | No | Known to occur in the general area | No further consideration required |
| Eastern Prairie Fringed-orchid | *Platanthera leucophaea* | END | END | S2 | The Eastern Prairie Fringed-Orchid has distinctive fringed white flowers with a deep "nectar spur" containing nectar and a flat, fringed "lip" serving as a platform for pollinating insects. It may lie dormant for years before flowering. It can be found in areas of tallgrass prairie or fen throughout the province and in some tamarack swamps of the Bruce Peninsula and Ottawa Area (1). | No | Known to occur in the general area | No further consideration required |

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# Appendix C
# Photographic Log

***Photo 1 View of Community 1 (CGL) facing south, November 2023.***

***Photo 2 View of Community 1 facing north, November 2023.***

***Photo 3 Community 2 (BBO1-2), November 2023.***

***Photo 4 Community 3 (BBO1), November 2023.***

# Appendix D

# Vegetation Species List

## Appendix - Vegetation Community and Inventory

| # | Common Name (Latin Name) | Vegetation Community | | | | | | | | | | CoW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| | Bouncing-bet (Saponaria officinalis) | | X | | | | | | | | | 3 |
| | Canada Wildrye (Elymus canadensis) | | X | | | | | | | | | 3 |
| | Canada Wormwood (Artemisia campestris ssp. canadensis) | | X | | | | | | | | | 5 |
| | Common Apple (Malus pumila) | | X | | | | | | | | | 5 |
| | Common Milkweed (Asclepias syriaca) | | X | | | | | | | | | 5 |
| | Common Yarrow (Achillea millefolium) | | X | | | | | | | | | 3 |
| | Flowering Spurge (Euphorbia corollata) | | D | | | | | | | | | 5 |
| | Manitoba Maple (Acer negundo) | | X | | | | | | | | | 0 |
| | Mossy Stonecrop (Sedum acre) | | X | | | | | | | | | 5 |
| | Smooth Brome (Bromus inermis) | | X | | | | | | | | | 5 |
| | Spotted Knapweed (Centaurea stoebe) | | D | | | | | | | | | 5 |
| | White Sweet-clover (Melilotus albus) | | X | | | | | | | | | 3 |
| | Wild Carrot (Daucus carota) | | X | | | | | | | | | 5 |

# Appendix E

# Significant Wildlife Habitat Assessment

| APPENDIX : Significant Wildlife Habitat Screening - 6E | | | | | |
|---|---|---|---|---|---|
| **SWH Type** | **Associated Species** | **Associated ELC Ecosites** | **Habitat Criteria** | **Presence (Y/N)** | **Additional Notes** |
| **Seasonal Concentration Areas of Animals** | | | | | |
| Waterfowl Stopover and Staging Areas (Terrestrial) | Ducks | Cultural Ecosites: CUM1, CUT1 | Fields that flood during spring (mid-March to May). | N | Habitat not present |
| Waterfowl Stopover and Staging Area (Aquatic) | Ducks, Geese | Marshes, Swamps, Shallow Water Ecosites: MAS1,MAS2, MAS3, SAS1 SAM1, SAF1, SWD1 to SWD7, | Ponds, marshes, lakes, bays, coastal inlets, and watercourses. Sewage treatment ponds and storm water ponds **not** SWH<br>Reservoir managed as a large wetland or pond/lake qualifies. | N | Habitat not present |
| Shorebird Migratory Stopover Area | Shorebirds | Beaches, Dunes, Meadow Marshes: BBO1, BBO2, BBS1, BBS2 BBT1, BBT2, SDO1, SDS2, SDT1, MAM1 to MAM5 | Shorelines of lakes, rivers and wetlands. Sewage treatment ponds and storm water ponds **not** SWH. | Y | Ecosite present |
| Raptor Wintering Area | Eagles, Hawks, Owls | Hawks/Owls - Combination of Forest and Cultural Ecosites: FOD, FOM, FOC, CUM, CUT, CUS, CUW<br><br>Bald Eagle: Forest or swamp close to open water (hunting ground): FOD, FOM, FOC, SWD, SWM, SWC | Raptor wintering sites: >20ha, with a combination of forest and upland. Idle/Fallow/Meadow (>15ha) with adjacent woodlands.<br>Eagle sites: open water, large trees and snags for roosting. | N | Habitat not present |
| Bat Hibernacula | Big Brown Bat, Tri-coloured Bat | Caves, Crevices: CCR1, CCR2, CCA1, CCA2 | Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Buildings and active mine sites **not** SWH. | N | Habitat not present |
| Bat Maternity Colonies | Big Brown Bat, Silver-haired Bat | Deciduous or mixed forests and swamps: FOD, FOM, SWD, SWM | Mature deciduous and mixed forest stands with >10/ha; large trees >25 cm DBH with cavities. | N | Habitat not present |
| Turtle Wintering Area | Turtles | SW, MA, OA, SA, FEO, BOO | Free water beneath ice. Soft mud substrate. Permanent water bodies, large wetlands, bogs, fens with adequate DO. | N | Habitat not present |
| Reptile Hibernaculum | Snakes | Habitat may be found in any ecosite other than very wet ones. Five-lined Skink: FOD and FOM, FOC1, FOC3 | Below frost line in burrows, rock crevices, rock piles or slopes, stone fences, abandoned stone foundations. Conifer or shrub swamps/swales, poor fens, depressions in bedrock with accumulations of sphagnum moss or sedge hummock ground cover.<br>Skink: mixed forest with rock outcrop openings; granite bedrock with fissures. | N | Habitat not present |
| Colonially-nesting Bird Breeding Habitat (Bank and Cliff) | Cliff Swallow, Northern Rough-winged Swallow | Eroding banks, sandy hills/piles, burrow pits, steep slopes, cliff faces, bridge abutments, silos, barns. CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1 | Exposed soil banks, **not** a licensed/permitted aggregate area. Does **not** include man-made structures (bridges or buildings), or recently (2 yrs) disturbed soil areas (berms, embankments, soil/aggregate stockpiles). | N | Habitat not present |
| Colonially-nesting Bird Breeding Habitat (Tree/Shrubs) | Great Blue Heron, Black-crowned Night Heron, Great Egret, Green Heron | SWM2, SWM3, SWM5, SWM6, SWD1 to SWD7, FET1 | Nests in live or dead standing trees in wetlands, lakes, islands and peninsulas. Shrubs and emergents may be used. Nests in trees are 11 to 15 m from ground, near top of the tree. | N | Habitat not present |
| Colonially-nesting Bird Breeding Habitat (Ground) | Herring Gull, Great Black-backed Gull, Little Gull, Ring-billed Gull, Common Tern, Caspian Tern, Brewer's Blackbird | Rocky island or peninsula in lake or river. Close to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird). MAM1 – 6; MAS1 – 3; CUM, CUT, CUS | Gulls and terns nesting on islands or peninsulas with open water or marshy areas. Brewers Blackbird colonies are found on the ground in low bushes close to streams and irrigation ditches within farmlands. | N | Habitat not present |
| Migratory Butterfly Stopover Area | Painted Lady, Red Admiral, **Special Concern:** Monarch | Combination of open and forested ecosites (need one from each).<br>Field: CUM, CUT, CUS<br>Forest: FOC, FOD, FOM, CUP | Minimum of 10 ha, located within 5 km of Lake Ontario. Combination of field and forest, undisturbed sites, with flowering species (preferred nectar plants). | N | Habitat not present |
| Landbird Migratory Stopover Areas | All migratory songbirds. All migrant raptor species. | FOC, FOM, FOD, SWC, SWM, SWD | Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline, those Woodlands <2km from Lake Ontario are more significant. Include a variety of habitats; forest, grassland and wetlands. | N | Habitat not present |
| Deer Yarding Areas | White-tailed Deer | FOM, FOC, SWM, SWC, CUP2, CUP3, FOD3, CUT | Stratum I: core deer yard - coniferous forest; 60% canopy cover with pine, hemlock, cedar, spruce. Stratum II: mixed or deciduous forest with plenty of browse available, may include agricultural areas. | N | Habitat not present |

| APPENDIX : Significant Wildlife Habitat Screening - 6E | | | | | |
|---|---|---|---|---|---|
| **SWH Type** | **Associated Species** | **Associated ELC Ecosites** | **Habitat Criteria** | **Presence (Y/N)** | **Additional Notes** |
| Deer Wintering Congregation Areas | White-tailed Deer | FOC, FOM, FOD, SWC, SWM, SWD | When movement is not constrained by snow depth (20cm) Woodlots > 100 ha and used annually. | N | Habitat not present |
| **Rare Vegetation Communities** | | | | | |
| Cliffs and Talus Slopes | | TAO, TAS, CLO, CLS, TAT, CLT | Cliff: near vertical bedrock >3m in height;<br>Talus Slope: coarse rock rubble at the base of a cliff | N | Habitat not present |
| Sand Barren | | SBO1, SBS1, SBT1 | Sand Barrens >0.5 ha. Vegetation can vary from patchy and barren to continuous meadow, thicket--like, or tree covered (less than 60%). Less than 50% vegetation cover are exotic species. | N | Habitat not present |
| Alvar | *Indicator species: Carex crawei, Panicum philadelphicum, Eleocharis compressa, Scutellaria parvula, Trichostema brachiatum,* Loggerhead Shrike | ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2 | Alvar >0.5 ha. Level, mostly unfractured calcareous bedrock with mosaic or rock pavements and bedrock overlain with thin veneer of soil. Vegetation cover varies from patchy to barren with <60% tree cover. | N | Habitat not present |
| Old Growth Forest | | FOD, FOC, FOM, SWD, SWC, SWM | Woodland areas 30 ha or greater or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. | N | Habitat not present |
| Savannah | | TPS1, TPS2, TPW1, TPW2, CUS2 | No minimum size; A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60% with less than 50% cover of exotic species. Remnant sites (railway right-of-ways) are **not** SWH. | N | Habitat not present |
| Tallgrass Prairie | | TPO1, TPO2 | No minimum size; An open Tallgrass Prairie habitat has < 25% tree cover. Less than 50% cover of exotic species. Remnant sites (railway right-of-ways) are not SWH. | N | Habitat not present |
| Other Rare Vegetation Communities | | Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. | Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps. Review Appendix M | Y | Ecosite present |
| **Specialized Habitat for Wildlife** | | | | | |
| Waterfowl Nesting Area | Ducks | Upland habitats adjacent to: MAS1 to MAS3, SAS1, SAM1, SAF1, MAM1 to MAM6, SWT1, SWT2, SWD1 to SWD4 | Extends 120 m from a wetland or wetland complex. Upland areas should be at least 120 m wide. Wood Ducks and Hooded Mergansers use cavity trees (>40cm dbh) in woodlands. | N | Habitat not present |
| Bald Eagle and Osprey Nesting, Foraging and Perching Habitat | Osprey, Bald Eagle | FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas | Nesting areas are associated with waterbodies along forested shorelines, islands, or on structures over water. | N | Habitat not present |
| Woodland Raptor Nesting Habitat | Northern Goshawk, Cooper's Hawk, Sharp-shinned Hawk, Red-shouldered Hawk, Barred Owl, Broad-winged Hawk | All forested ELC ecosites. Forests, swamps, and conifer plantations: FOD, FOM, FOC, SWD, SWM, SWC, CUP3 | Natural or conifer plantation woodland/forest stands >30 ha with > 10 ha interior habitat. Stick nests. | N | Habitat not present |
| Turtle Nesting Areas | Midland Painted Turtle, Snapping Turtle, Northern Map Turtle | Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within: MAS1 to MAS3, SAS1, SAM1, SAF1, BOO1 | Nest sites close to water, within open sunny areas with soil suitable for digging. Sand and gravel beaches. Nesting areas on sides of roads are not SWH. | Y | Ecosite present |
| Seeps and Springs | Wild Turkey, Ruffed Grouse, Spruce Grouse, White-tailed Deer, Salamander spp. | Seeps/Springs are areas where ground water comes to the surface. | Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream/river system. | N | Habitat not present |
| Amphibian Breeding Habitat (Woodland) | Woodland Frogs and Salamanders | FOC, FOM, FOD, SWC, SWM, SWD | Wetland, pond or woodland pool of >500 $m^2$ within or adjacent (within 120m) to wooded areas (no min. size). Woodlands with permanent ponds or those containing water until mid-July are preferred. | N | Habitat not present |
| Amphibian Breeding Habitat (Wetlands) | Toads, Frogs, and Salamanders | SW, MA, FE, BO, OA and SA.<br><br>Typically isolated (>120m) from woodland ecosites, however larger wetlands may be adjacent to woodlands. | Wetlands >500$m^2$ isolated from woodland ecosites with high species diversity. Permanent water bodies with abundant vegetation for bullfrogs. | N | Habitat not present |

| APPENDIX : Significant Wildlife Habitat Screening - 6E | | | | | |
|---|---|---|---|---|---|
| **SWH Type** | **Associated Species** | **Associated ELC Ecosites** | **Habitat Criteria** | **Presence (Y/N)** | **Additional Notes** |
| Woodland Area-Sensitive Bird Breeding Habitat | Birds: Yellow-bellied Sapsucker Red-breasted Nuthatch, Veery, Blue-headed Vireo, Northern Parula, Black-throated Green Warbler, Blackburnian Warbler, Black-throated Blue Warbler, Ovenbird, Scarlet Tanager, Winter Wren,<br>Special Concern:<br>Cerulean Warbler<br>Canada Warbler | FOC, FOM, FOD, SWC, SWM, SWD | Large mature (>60 years) forest stands or woodlots > 30 ha. Interior forest habitat of >200 m from forest edge. | N | Habitat not present |
| **Habitat of Species of Conservation Concern** | | | | | |
| Marsh Bird Breeding Habitat | American Bittern, Virginia Rail, Sora, Common Moorhen, American Coot, Pied-billed Grebe, Marsh Wren, Sedge Wren, Common Loon, Sandhill Crane, Green Heron, Trumpeter Swan | MAM1 to MAM6, SAS1, SAM1, SAF1, FEO1, BOO1<br>For Green Heron: SW, MA and CUM1 sites. | Wetlands with shallow water and emergent aquatic vegetation. | N | Habitat not present |
| Open Country Bird Breeding Habitat | Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow, Short-eared Owl | CUM1, CUM2 | Grassland/meadow >30 ha. Not being actively used for farming. Habitat established for 5 years or more. | N | Habitat not present |
| Shrub/Early Successional Bird Breeding Habitat | Brown Thrasher, Clay-coloured Sparrow, Field Sparrow, Black-billed Cuckoo, Eastern Towhee, Willow Flycatcher, Yellow-breasted Chat, Golden-winged Warbler | CUT1, CUT2, CUS1, CUS2, CUW1, CUW2 | Large field areas succeeding to shrub and thicket habitats > 10 ha. Areas not actively used for farming in the last 5 years. | N | Habitat not present |
| Terrestrial Crayfish | Chimney or Digger Crayfish; (*Fallicambarus fodiens* ) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes* ) | MAM1 to MAM6, MAS1 to MAS3, SWD, SWT, SWM,<br>CUM1 sites with inclusions of the aforementioned. | Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish | N | Habitat not present |
| Special Concern and Rare Wildlife Species | Any species of concern or rare wildlife species (S1-S3, SH) plant and animal. | Any ELC code. | Presence of species of concern or rare wildlife species identified within 1 or 10 km grid (NHIC). | N | Confirmed with targetted survey |