

**Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
4131 County Road 32
Part of Lot 12, Concession 8 (Douro)
Township of Douro-Dummer
County of Peterborough**

Prepared For:

Mr. Gary Bolton
Trent Ridge Farms
4131 County Road 32
Douro, Ontario
K0L 2H0
Project #: 21-2882



ORE

Oakridge Environmental Ltd.

Environmental and Hydrogeological Services

December 2021

December 8th, 2021

Trent Ridge Farms
4131 County Road 32
Douro, Ontario
K0L 2H0

Attention: **Mr. Gary Bolton**

Re: Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
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Part of Lot 12, Concession 8 (Douro)
Township of Douro-Dummer, County of Peterborough
ORE File No. 21-2882

Dear Mr. Bolton:

As requested, Oakridge Environmental Ltd. (ORE) is pleased to provide this Natural Heritage Evaluation (NHE) for the above-referenced property located in the County of Peterborough.

As part of this study, ORE staff completed a series of site inspections during the spring/early summer period. No Threatened, Endangered or Special Concern species were detected on the subject site. However, an unevaluated wetland was identified in the wooded area directly north of the proposed severance parcels. As such, this NHE addresses the Key Natural Heritage Features and Significant Wildlife Habitat (SWH) identified on the property.

Recommendations with respect to mitigation measures intended to limit the development from imposing on these local environmental features have been included in this report. It is expected that the development can proceed, provided those recommendations are implemented.

Yours truly,
Oakridge Environmental Ltd.

Original Signed By

Rob West, HBSc., CSEB
Senior Environmental Scientist

Table of Contents

Page No.

1.0	Introduction	1
1.1	General	1
1.2	Site Description, Location and Access	1
2.0	Policy Framework	2
2.1	Provincial Policy Statement	2
2.2	Otonabee Region Conservation Authority	3
2.3	Growth Plan for the Greater Golden Horseshoe (Growth Plan)	3
2.4	Peterborough County Official Plan	4
2.5	Township of Douro-Dummer	5
3.0	Scope of Work	5
4.0	Physical Setting	6
4.1	Topography and Drainage	6
4.2	Geological Setting	6
5.0	Background Data	7
5.1	Natural Heritage Information Centre (NHIC)	7
5.2	Ontario Breeding Bird Atlas (OBBA)	8
5.3	eBird	9
5.4	iNaturalist	9
5.5	Fish ON-Line Database	10
6.0	Inspection Methodologies	11
6.1	Vegetation	11
6.2	Avifauna Surveys	11
6.3	Mammals	12
6.4	Herptiles	13
6.5	Significant Wildlife Habitat (SWH)	13
7.0	Site Inspection Data	14
7.1	General	14
7.2	Ecological Land Classification (ELC)	15
7.3	Fauna	17
7.3.1	Avifauna	18
7.3.2	Herptiles	18
7.3.3	Mammals	18
7.4	Endangered - Threatened or Provincially Rare Species	19
8.0	Significant Wildlife Habitat Assessment (SWH)	20
9.0	Impact Assessment	21
9.1	Sensitive Features	21
9.2	NHIC Species	22
9.3	Ontario Breeding Bird Atlas (OBBA)	22
9.4	eBird	24
9.5	iNaturalist	24

9.6	Significant Wildlife Habitat	25
9.7	Identified SAR/SAR Habitat	25
9.8	Fisheries	26
9.9	Construction	26
9.10	Future Use/Occupation.....	27
10.0	Conclusions	27
11.0	Recommendations	29

List of Figures

Figure 1	General Location Plan
Figure 2	Topography and Drainage
Figure 3	Surficial Geology
Figure 4	Vegetation Plan
Figure 5	Site Photos
Figure 6	Site Photos
Figure 7	Constraints Plan

List of Appendices

Appendix A	Excerpt from the Provincial Policy Statement (PPS)
Appendix B	Excerpt from the County of Peterborough Official Plan (OP)
Appendix C	NHIC Database and Species Descriptions
Appendix D	OBBA Database and Species Descriptions
Appendix E	eBird Database
Appendix F	iNaturalist Records
Appendix G	Species List
Appendix H	Bat Data Summary
Appendix I	Significant Wildlife Habitat (SWH)

Natural Heritage Evaluation (NHE)
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4131 County Road 32
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Township of Douro-Dummer, County of Peterborough

1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE) is pleased to provide this Natural Heritage Evaluation (NHE) for the above-referenced property (referred to as the subject site). The property is located approximately 3 km south of Lakefield, Ontario (Figures 1 and 2). It is understood that the current property owner would like to sever two (2) lots from the farm parcel for the purpose of single residential development.

Based on the information provided, two (2) lot severances are being proposed on the southern portion of the property within an approximate area of 2.6 ha (6.42 acres) with frontage on County Road 32 (River Road). The retained lands will consist of 29.5 ha (72.9 acres) and will contain the existing residential home.

The property owner will submit a lot layout once the agencies have had a chance to review the constraints in this NHE.

The subject site fronts onto the east side of County Road 32, with the Otonabee River on the west side of County Road 32. The southern lobe of the property does not come into contact with the river and is separated from it by River Road and Lock 25 further north. The property also contains unevaluated wetland. As a result, a study is required to support the application.

The purpose of the study is to characterize the site conditions and demonstrate that the subject property can sustainably accommodate the proposed severances and associated development without resulting in unacceptable impacts to any environmentally sensitive features. The NHE also includes an assessment of Species at Risk (SAR) on and in the vicinity of the site, in accordance with the provincial Endangered Species Act (ESA) and the Municipal Official Plan (OP).

1.2 Site Description, Location and Access

The site is situated at 4131 County Road 32 within part of Lot 12, Concession 8, in the Township of Douro-Dummer (Douro), County of Peterborough (Figures 1 and 2). It is bound by County Road 32 on the west, Douro 7th Line to the east and Hickey Road to the north. The site can be accessed directly from County Road 32.

The subject site occurs approximately 3 km south of Lakefield and has a total area of

approximately 32.1 ha (79.4 acres). A residence, commercial greenhouse operation, and accessory structures are located on the northern portion of the subject site, within the retained lands. A tributary of Sawyers Creek bisects the property from north to south in the central portion. The area of the proposed severances is located in the southern portion and consists of vacant land and unevaluated wetland.

2.0 Policy Framework

2.1 Provincial Policy Statement

The 2020 Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development. This document stresses the need for appropriate development while protecting resources of provincial interest, public health and safety, and the quality of Natural Heritage Features.

Section 3 of the Planning Act requires that Planning authorities shall “have regard for” the PPS when exercising any authority that affects municipal Planning matters. Since this is a Planning application, the Municipality and County will usually apply the most recent version of the PPS Natural Heritage section requirements to ensure that the relevant natural heritage features are detected and that any required mitigation is applied to protect those features (Appendix A).

ORE is knowledgeable of and has reviewed Section 2.1 (Natural Heritage) of the 2020 PPS with specific regard to the applicability of the Policy to the subject site. In addition, ORE has reviewed and utilized the methodologies outlined in the Ministry of Northern Development, Mines, Natural Resources and Forestry’s (MNDMNR’s) Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement (2005).

The PPS lists a number of features that must be addressed, including but not limited to the following:

- Significant Woodlands
- Significant Wetlands
- Significant Valleylands
- Significant Wildlife Habitat (SWH)
- Significant Fisheries Habitat
- Species at Risk

The MNDMNR’s assessment requirements under the “*Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E*” is applicable to Planning Applications. ORE staff reviewed the site’s vegetation and formed a candidate SWH list, which was further refined based on our knowledge of the site. The SWH assessment focussed on the type

of vegetation to be impacted by the development, rather than all of the ELC types observed on the subject property.

Similarly, the remaining Natural Heritage Features listed above have been identified on the property and these have been researched and discussed as per the PPS requirements.

2.2 Otonabee Region Conservation Authority

The subject site is regulated by Ontario Regulation 167/06, the *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation* of the Otonabee Region Conservation Authority (ORCA). In addition, ORCA typically provides review services on behalf of local Municipalities.

ORCA's Watershed Planning and Regulations Policy Manual (December 2015) requires that a comprehensive Environmental Impact Study (EIS) be completed for lot creation (i.e., subdivisions, single lot severances, etc.). This typically includes bio-inventory surveys conducted during three to four seasons, with the spring breeding bird period being most important.

ORE staff met on-site with Matt Wilkinson (Planner) and Marnie Guindon (Regulations & Enforcement Officer) on May 31st, 2021 to review the location of the unevaluated wetland. The wetland boundary was discussed and the location of the boundary was addressed on-site.

This study was prepared to meet the requirements of ORCA's regulation.

2.3 Growth Plan for the Greater Golden Horseshoe (Growth Plan)

The proposed severances are subject to a Planning application and related approvals. Consequently, the Growth Plan is applicable.

In July of 2017, the Ministry of Natural Resources and Forestry (now the MNDMNR) issued the Growth Plan for the Greater Golden Horseshoe (Growth Plan). The Growth Plan is a policy document intended to assist planning authorities implement a set of standardized objectives for development within their jurisdictions. Among other things, the Growth Plan established a Natural Heritage System (NHS) in accordance with the PPS for the entire region. The NHS identifies Key Natural Heritage Features (KNHF) and water resource systems (Key Hydrologic Features - KHF).

The Growth Plan also prescribes certain setbacks from these features, typically in the form of a "Vegetation Protection Zone" (VPZ), also commonly referred to as a Vegetation

Protection Area (VPA)¹. The NHS and these prescribed setbacks are intended to be applicable to all new developments that require a Planning application, outside the designated settlement areas of the Greater Golden Horseshoe.

The Growth Plan was amended in May 2019 due to its restrictive nature. It was revised to allow Municipalities more decision-making abilities in their jurisdiction by providing their own Natural Heritage System (NHS), rather than adopting the Growth Plan in its entirety.

Section 4.2.3.1 of the Growth Plan states that “*outside of settlement areas, development or site alteration is not permitted in key natural heritage features that are part of the Natural Heritage System for the Growth Plan or in key hydrologic features...*”. Since the Natural Heritage System for the Growth Plan has not yet been implemented by the County of Peterborough nor the Township, this policy currently does not prohibit development in key natural heritage features (such as the significant woodlands on site). However, this policy provides protection to the key hydrologic features (i.e., the unevaluated wetland) from development and site alteration.

Neither the Municipality nor County have a current NHS that would apply.

This assessment has reviewed the site conditions to determine if there are any KHF within the subject site. The applicable setbacks have been applied as per the Growth Plan.

2.4 Peterborough County Official Plan

The Official Plan (OP) of Peterborough County states the relevant requirements for all studies to be completed in support of a proposed development application. The OP lists certain criteria that must be met for an “Environmental Impact Assessment”. The applicable excerpts from the OP are included in Appendix B.

The County has not completely adopted the provincial Growth Plan requirements. Although the County adheres to the requirements under the Growth Plan regarding Key Hydrological Features (KHF), it does not adhere to the Significant Woodland requirements. It is understood that the County is generating its own Natural Heritage System (NHS). Until then, the Significant Woodland requirement for NHEs is not necessary.

Based on the County requirements, an EIA/NHE must be completed for this severance application due to the proposed location of the severance occurring within 120 m of a

¹ For the purpose of this report, VPA is used in place of VPZ in an attempt to prevent confusion with regards to zoning terminology.

KHF. The County also requires that the study include a review and discussion of threatened and endangered species, either on or directly adjacent to the subject site, as part of a Planning application.

The County may require a peer review of this report. Therefore, additional information may be requested to satisfy their peer review consultant and Peterborough County.

In addition to reviewing the Official Plan requirements, ORE staff queried the subject property on the County's Geographic Information System (GIS) which is a GeoCortex type database that illustrates all available features that have been recorded for the subject site. The County GIS illustrates the unevaluated wetland and Otonabee River as the only KHF's on the subject site.

2.5 Township of Douro-Dummer

The proponent's application will be submitted to the Township of Douro-Dummer for the purpose of obtaining Planning approvals for the two (2) lot severances. The Township will rely on the County and the peer review process to ascertain whether the natural heritage objectives have been adequately addressed in this NHE.

3.0 Scope of Work

In completing this NHE, the following tasks were completed:

- Relevant background information regarding the site (air photos, topographic mapping, etc.) was compiled and review. Queries of the following databases were completed: MNDMNR's Natural Heritage Information Centre (NHIC) website database, iNaturalist database, eBird database, Fish ON-Line, and the Ontario Breeding Bird Atlas (OBBA) database.
- Site features were mapped using a differential Global Positioning System (dGPS). A base plan (using geo-referenced aerial photography) was prepared and all site information (i.e., vegetation and sensitive features) was plotted.
- A series of nine (9) inspections were completed between the spring breeding bird and summer season periods. A biological inventory of the flora and fauna of the property was completed. Basic vegetation communities were identified.

Any significant environmental features or important wildlife species were identified and their positions/boundaries were determined utilizing a dGPS.

- All data have been interpreted and this report has been prepared.

4.0 Physical Setting

4.1 Topography and Drainage

The subject property occurs within the broad and relatively flat valley of the Otonabee River. The valley extends over a width of about 1.2 km in the site area (Figure 2). Within the property, the total topographic relief is approximately 6 m.

A poorly defined, minor drainage divide occurs mid-property, splitting runoff into two local regimes. Runoff west of the local divide flows westward to the Otonabee River and/or local pocket wetlands that occur along the river's edge. The central part of the property drains to the east-northeast with flows conveyed by a small tributary that conveys flows to Sawyer Creek and the associated Sawyers Creek (Provincially Significant) Wetland, which borders part of the property's eastern boundary. The easternmost part of the property also drains to the tributary (generally westward).

The proposed severance lots occur in the southernmost part of the property, fronting onto County Road 32 (and the Rotary Greenway Trail). Topographic relief within the proposed lots is minimal, consisting of <2 m. Being west of the local drainage divide, runoff from the lots will flow westward, to the river. Topographic mapping indicates that a small pocket wetland (unevaluated) occurs within the proposed lots, with no physical connection to the river. The wetland likely occupies a small, localized depression.

4.2 Geological Setting

Although the subject property occurs within the physiographic area referred to as the Peterborough Drumlin Field, the geological (and topographic) setting is dominated by the Otonabee River valley. The river occurs within a wide valley that was once a major glacial spillway, conveying glacial meltwaters to Lake Iroquois, via Glacial Lake Peterborough. As illustrated by Figure 3, the dominant soil type consists of drumlinized Newmarket Till, a low-permeability mixture of silt, sand, clay and minor gravel. The till is widely considered to be a regional aquitard.

Within the valley, localized glaciofluvial deposits of coarse gravel and sand are fairly common in the area. However, many parts of the valley system were subjected to significant erosional forces during that period, resulting in the removal (or near-removal) of the overburden and the creation of terraced slopes along the valley margins. As such, many parts of the valley floor have only a thin mantle of till remaining above

the underlying limestone bedrock. Although not illustrated by Figure 3, limestone outcrop and subcrop occur locally.

Based on the mapping, the majority of soils within the proposed lots are expected to consist of a thin layer of low-permeability Newmarket Till overlying the limestone, consistent with the presence of a small pocket wetland as indicated on Figure 2. However, the coarse glaciofluvial soils are mapped as occurring close to the site's southwestern corner. Therefore, some of those contrasting, highly permeable soils may also occur within the proposed severance lots.

Perusal of Ministry of the Environment, Conservation and Parks (MECP) well record database for the site area reveals that there are few recorded wells present. The formation log for one of the closest recorded wells (No. 5105342) indicates that the overburden consists of 0.9 m of "clay" (likely till) occurs over limestone bedrock, as would be expected from the published mapping. Other well records in the general area (e.g., Nos. 5115082 and 5108714) indicate that the till can be up to 3.7 m thick.

The geological conditions suggest that a shallow water table condition may exist at the proposed severance lots. The well record data also suggest this condition. However, the water table may occur within the upper part of the fractured limestone.

5.0 Background Data

5.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by MNR. Within the database, Ontario has been divided into a grid consisting of 1 km² areas or *regional squares*, each given a unique identifier. The squares can be searched for historical *Species at Risk* (SAR) occurrences and for Areas of Natural and Scientific Interest (ANSI).

The property falls within the 1 km² squares 17QK1719, 17QK1819 and 17QK1820.

The query indicates that there are two (2) Natural Areas reported in the area.

Natural Area

Sawer Creek Wetland
Sawer Creek South

The query indicates that seven (7) Species at Risk (SAR) have been recorded in the area:

<u>Common Name</u>	<u>Scientific Name</u>	<u>S-Rank/SARO Status</u>
Eastern Meadowlark	<i>Sturnella magna</i>	S4B/Threatened
Bobolink	<i>Dolichonyx oryzivorus</i>	S4B/Threatened
Snapping Turtle	<i>Chelydra serpentina</i>	S3/Special Concern
Northern Map Turtle	<i>Graptemys geographica</i>	S3/Special Concern
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	S3/Special Concern
Wood Thrush	<i>Hylocichia mustelina</i>	S4B/Special Concern
Blanding's Turtle	<i>Emydoidea blandingii</i>	S3/Threatened

Our site inspections included targeted searches for potential SAR habitat of these species. An excerpt from the NHIC's website illustrating the location of the squares relative to the subject site is included in Appendix C.

5.2 Ontario Breeding Bird Atlas (OBBA)

The OBBA² provides up-to-date reliable information on birds within Ontario. The information includes species descriptions, habitats, range, documented sightings, etc. The subject site occurs within the 10 km² areas mapped as 17TQK11 and 17TQK12, Region 16 and Peterborough. The Summary Sheets for the atlas areas are provided in Appendix E.

From our review of the information, significant breeding species that could potentially be associated with habitats in the site area include the following:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Eastern Wood-Pewee	<i>Contopus virens</i>	Special Concern
Barn Swallow	<i>Hirundo rustica</i>	Threatened
Wood Thrush	<i>Hylocichla mustelina</i>	Threatened
Eastern Meadowlark	<i>Sturnella magna</i>	Threatened
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Special Concern
Black Tern	<i>Chlidonias niger</i>	Special Concern
Canada Warbler	<i>Cardellina canadensis</i>	Special Concern
Least Bittern	<i>Ixobrychus exilis</i>	Threatened
Bank Swallow	<i>Riparia riparia</i>	Threatened
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Special Concern
Cerulean Warbler	<i>Setophaga cerulea</i>	Special Concern
Chimney Swift	<i>Chaetura pelagica</i>	Threatened

Common Nighthawk	<i>Chordeiles minor</i>	Special Concern
Eastern Whip-poor-will	<i>Anthrostomus vociferus</i>	Threatened

Brief descriptions of each of the listed species and associated preferred habitats are also included in Appendix D. The site inspections included a review of potential SAR habitat and targeted searches for the listed species.

5.3 eBird

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as “hotspots” and list species of bird they have detected each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is Otonabee River - between Lock 24 and 25, located adjacent to the western boundary of the site. A total of 106 species were recorded. Of those, four (4) species are considered SAR, including the following:

<u>Common Name</u>	<u>Scientific Name</u>	<u>Status</u>
Barn Swallow	<i>Hirundo rustica</i>	Threatened
Bank Swallow	<i>Riparia riparia</i>	Threatened
Eastern Meadowlark	<i>Sturnella magna</i>	Threatened
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Special Concern

Brief descriptions of each of the listed species and associated preferred habitats are included in Appendix E. The site inspections included a review of potential SAR habitat and targeted searches for the listed species.

5.4 iNaturalist

The iNaturalist website is a database whereby citizens and scientists can provide locations and details of all types of species detected throughout Ontario. However, the NHIC version is a species collective identified by NHIC staff and research level professionals at universities. The NHIC version focusses on SAR and rare species tracked by the NHIC. The nearest records include the following:

- Eastern Meadowlark - SARO
- Midland Painted Turtle - tracked by NHIC
- Bald Eagle - SARO
- Snapping Turtle - SARO
- Redhead - tracked by NHIC
- Faint Spotted Palthis Moth
- Caspian Tern - tracked by NHIC

- Bobolink - SARO
- Barn Swallow - SARO
- Chimney Swift - SARO
- Black Tern - tracked by NHIC
- Monarch- SARO
- Ross's Goose - tracked by NHIC

The descriptions for the species above are provided in Appendix F. The ones that possess the SARO label are Species at Risk in Ontario.

5.5 Fish ON-Line Database

The Fish On-line database is run by the province and is a Geocortex based Geographic Information System (GIS).

The user is able to search the water body according to name and identify local fish species that have been detected within the waterway. According to the database, several fish species have been detected in the Otonabee River at Lock 25. The following species have been identified:

- Bluegill (*Lepomis macrochirus*)
- Black Crappie (*Pomoxis nigromaculatus*)
- Brown Bullhead (*Ameiurus nebulosus*)
- Common Carp (*Cyprinus carpio*)
- Largemouth Bass (*Micropterus salmoides*)
- Muskellunge (*Esox masquinongy*)
- Northern Pike (*Esox lucius*)
- Pumpkinseed (*Lepomis gibbosus*)
- Rock Bass (*Ambloplites rupestris*)
- Smallmouth Bass (*Micropterus dolomieu*)
- Walleye (*Sander vitreus*)
- White Sucker (*Catostomus commersonii*)
- Yellow Perch (*Perca flavescens*)

None of the above listed fish are a SAR. The fish detected in the Fish ON-Line database are predominantly warmwater species which is consistent with conditions in the Otonabee River watershed.

6.0 Inspection Methodologies

6.1 Vegetation

The site has been characterized by its various vegetation communities using the methodologies included in the *Ecological Land Classification (ELC) - First Approximation and Its Applications* (1998). The 1998 Ecological Land Classification - First Approximation is a guide used by Ecologists to standardize the classification of different vegetation community types across Ontario. The classification system enables an ecologist to identify vegetation communities based on the species present, soil materials and moisture regimes.

There have been a number of updates to the ELC scheme to further refine the classification of Ecosites throughout Ontario. As a result, the 2008 *Draft ELC Guide* provides a further breakdown of the 1998 ELC Guide - First Approximation communities and includes many new communities to index from. The 2008 ELC scheme also provides a cross-reference to the 1998 guide communities. This report uses a combination of both the 1998 ELC communities (which are considered the primary vegetation communities) and the 2008 Draft ELC to supplement the vegetation community lists.

Prior to conducting the site inspections, aerial photography of the subject site was analysed to roughly delineate communities based on recognizable vegetation differences. Each identified community was subsequently inspected through soil and vegetation analysis. Dominant vegetation types were recorded and boundaries of the various communities mapped using a dGPS (when the boundary of the ELC community is not recognizable on the air photo).

Soil characteristics were determined using the methods outlined in the *Field Manual for Describing Soils in Ontario* (2009) and the results were used to further classify the ecological community. Where possible, any exposed soil areas were also explored to determine the overall texture of the soils in the area.

In addition to identifying and mapping the ELC communities, ORE staff assessed each vegetation community from the perspective of whether they are hydrologically sensitive, and/or whether they may represent Species at Risk habitat.

6.2 Avifauna Surveys

ORE staff attended the site a total of nine (9) times during the migratory/breeding bird season and conducted point-count surveys according to, and exceeding, the OBBA survey techniques. ORE staff endeavoured to detect all available avian species by sight, calls and notes, within and proximal to the site. Bird calling devices and “pishing and

squeaking” were used to attract bird species from within the forest communities outside of the typical morning chorus hours when birds are less vocal/active.

All species overheard or observed during the survey were recorded. The surveys were conducted in the early morning chorus hours between approximately 4:30 AM and 9 AM, which was ideal for the season. The majority of birds were very active in the early morning period, foraging, singing, with dominant males defending their territories.

The avian surveys did not stop during the early morning time periods; the late morning periods were spent searching the vegetation communities and identifying plant species, which were also useful in flushing and detecting birds.

Two (2) evening inspections were completed to determine whether any nocturnal Species at Risk avian were present. The nocturnal surveys were completed between approximately 9 PM and 10 PM. One of the inspections was conducted during a full moon phase, which is favourable with respect to the Bird Studies Canada Roadside protocol, as Nightjars are more active during full moon phases.

6.3 Mammals

Mammals were detected utilizing the methodologies outlined in the MNDMNR's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Mammals were generally identified by either direct observation or via their tracks and/or scat droppings at the site.

No live traps were set/installed at the site as a permit is necessary to trap mammals. This was deemed unnecessary as there are no known SAR mammals within the area. Tracking and other signs to detect mammals were sufficient for the purpose of this study.

The subject site does not contain any deer wintering habitat nor any other significant mammal wildlife habitat for those species outlined in the MNDMNR's October 2000 - Significant Wildlife Habitat Technical Guide.

ORE staff installed two (2) acoustic bat detectors on-site between August 4th to 11, 2021. The acoustic detectors were situated to overlook the high canopy areas of the woodland where bats would colonize/roost in the spring and summer period. The sound files were processed using SonoBat 4.4.1 North America.

6.4 Herptiles

The protocol employed for detection of Herptiles followed MNDMNR's March 1998 - Wildlife Monitoring Programs and Inventory Techniques for Ontario. Furthermore, the December 2016 Survey Protocol for Ontario's Species at Risk Snakes was implemented on-site. The surveys of basking habitats within the creek area were completed during the spring and summer season, when most herptiles are active. The surveys were conducted during warm, low wind conditions, which were ideal for detecting basking snakes and lizards.

During the inspections, ORE staff conducted visual encounter surveys while searching through brush piles, rolled over lumber and deadfall within the woodland to determine whether any significant species of herptile could be detected. The visual encounter surveys extended to County Road 32 to identify dead-on-road herptiles from the previous evening.

ORE staff also checked within any covered such as plywood pieces, and other artificial cover objects looking for basking snakes in the early morning and evening periods.

In addition, ORE staff completed evening surveys for the purpose of collecting nocturnal avian data and to identify amphibian species utilizing the site. The amphibian surveys were conducted according to the MNDMNR's Marsh Monitoring Program (MMP). This program identifies the abundance of amphibians according to a numerical scale (from 1-3) such that: 1 = 1 to 2 individuals calling; 2 = there are several individuals calling, however, the number of individuals can still be identified; and, 3 = an abundance of amphibians calling and it is either very difficult to or impossible to determine the number of individuals due to overlap in the number of calling males.

The wetland and on-site creek would likely provide suitable habitat for turtles from the early spring into mid-summer period. The sandy embankments and lawn areas would provide potential nesting habitat for these species during the breeding period in the early spring season.

6.5 Significant Wildlife Habitat (SWH)

SWH has been evaluated utilizing the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E*, published by the MNR (January 2015).

Potential SWH were evaluated according to the criteria outlined in the schedules for candidate SWH. The SWH tables were consulted to assess whether the site possesses Seasonal Concentration Areas of Animals, Rare Vegetation Communities, Specialized Habitats of Wildlife considered SWH, and Animal Movement Corridors.

7.0 Site Inspection Data

7.1 General

For this NHE, ORE staff conducted nine (9) site inspections - seven (diurnal) and two (nocturnal) on the following dates:

<u>Date of Inspection</u>	<u>Time of Inspection</u>	<u>Temp. °C</u>	<u>Beaufort (Wind) Index</u>	<u>Conditions</u>
Diurnal - March 13, 2021	10 AM - 11:30 AM	3	0 - Calm	Cold and clear, Initial site meeting with proponent to review wetland conditions and discuss severances.
Diurnal - May 31, 2021	1 PM - 2:30 PM	26	0 - Calm	No Cloud Cover, Hot and Humid, Early Migratory Bird Detection, Emerging Reptiles, Vegetation Inspections and met with ORCA regarding wetland boundary.
Diurnal - June 6, 2021	6 AM - 9 AM	17	2 - Light Breeze	Minor (5%) Cloud Cover, Breeding Bird Survey, Reptile Mammal, Insect and Vegetation Surveys.
Diurnal - June 19, 2021	6:30 AM to 9 AM	23	1 - Light Air	No Cloud Cover, Breeding Bird Survey, Reptile Mammal, Insect and Vegetation Surveys.
Diurnal - June 28, 2021	4:30 AM - 5:30 AM	25	1 - Light Air	Overcast and Breaking-up Cloud Cover, Hot and Humid. Breeding Bird Survey, Reptile Mammal, Insect and Vegetation Surveys.
Nocturnal - July 14, 2021	8 PM- 10 PM	23	2 - Light Breeze	25% Cloud cover, Amphibian Survey 1 and Nocturnal SAR Detection, Vegetation Inspections.
Nocturnal - July 23, 2021	9 PM - 10 PM	16	1 - Light Air	Overcast, Amphibian Survey and Nocturnal SAR Detection. Vegetation Inspections.
Diurnal - August 4, 2021	1 PM - 4 PM	25	3 - Gentle Breeze	75% Cloud Cover, Install Bat Detectors. Species at Risk and Vegetation Inspections.

Diurnal August 11, 2021	2 PM - 4 PM	26	1 - Light Air	25% Cloud Cover, Retrieve Bat Detectors, SAR Detection and Vegetation Inspections.
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The above mentioned inspections were completed to identify any/all species on the property. The resulting species list was examined to identify any sensitive rare species (S1, S2, S3), and/or whether they have a SARO status of Special Concern, Threatened, or Endangered. The vegetation types were also reviewed in the context of whether they are classified by the NHIC as provincially rare ecosites.

7.2 Ecological Land Classification (ELC)

ELC inspections were focussed on the proposed severance lots and immediate adjacent lands, as per the recommendations of the MNDMNR's Natural Heritage Reference Manual. The identified ELC communities are illustrated on Figure 4 and photos of the communities/site conditions are provided in Figures 5 and 6. None of the ELC communities listed below are considered to be provincially rare by the NHIC.

Based on our site inspection, the following vegetation communities have been identified on the site, as per the *1998 and/or the draft 2008 Ecological Land Classification (ELC) for Southern Ontario* and *Field Guide to Forest Ecosystems of Central Ontario - SCSS Field Guide FG-01 (1997)*:

Upland Communities:

1. Mineral Cultural Meadow (CUM1)

The ELC describes the CUM1 communities as resulting from cultural or anthropogenic-based disturbances/alterations to land. Tree cover is typically less than 25% and the presence of shrubs is also less than 25%.

The CUM1 community occurs in the southern portion of the property where the two (2) severances are proposed to occur. It occurs on either side of the FOM7 community discussed below. The cultural meadow setting is the ideal location for a development as this will ensure the pristine woodland and/or wetland habitats are retained on-site, however, depends on whether all of the natural heritage and planning setbacks can be attained west of the FOM7 community. If not, some of the development may have to spill over into the east CUM1 community.

2. Mineral Cultural Thicket (CUT1)

The ELC states that this thicket community must have less than 25% tree cover and greater than 25% shrub cover and it will possess a high concentration of non-native plant species in the base layers.

The CUT1 area occurs north of the CUM1 habitat. It possesses Buckthorn (*Rhamnus carthtica*) and Staghorn Sumac (*Rhus typhina*). The same groundcover meadow species occur in the CUM1 habitat to the south, occurs within the CUT1 community. No development is proposed to occur within this community.

3. Fresh - Moist White Cedar - Hardwood Mixed Forest (FOM7)

According to the ELC manual, a Fresh - Moist White Cedar Hardwood Mixed Forest (FOM7) possesses 60% or more canopy cover consisting of at least 25% conifer species and at least 25% deciduous species. FOM7 is dominated entirely by Eastern White Cedar (*Thuja occidentalis*) with Trembling Aspen (*Populus tremuloides*), Paper Birch (*Betula papyrifera*), Balsam Poplar (*Populus balsamifera*) and Red Maple (*Acer rubra*). The soils tend to be on the moist end of the moisture regime gradient.

This community occurs along the eastern edge of the proposed severances and forms part of the fencerow. The cedars will be retained along the row, if the proposed severances can remain outside the on-site constraint areas. If the lots have to be reconfigured, it may be preferable to open an access road through this community and locate the residential development in the east field opening on the south lot. The north lot could be slightly wider, allowing for the residential envelope to occur west of the FOM7 community.

4. Fencerow (TAGM5)

There is no description provided in the Draft 2008 Ecological Land Classification for this ecosite.

The fencerows occur around the southern and western border of the CUM1 habitat where the proposed severances are to be located. The fencerows possess some mature tree species, along the property boundary, however, it should be possible to retain these trees within any side yard setbacks.

Wetland Communities:

5. White Cedar - Hardwood Mineral Mixed Swamp (SWM1-1)

The ELC describes a White Cedar - Hardwood Mineral Mixed Swamp (SWM1-1) as having tree cover present in greater than 25% of the ecosite, with a relatively even mix of deciduous and coniferous species. This ecosite is dominated by Eastern White Cedar (*Thuja occidentalis*) and hardwood species such as Trembling Aspen (*Populus tremuloides*), White Birch (*Betula papyrifera*), Green Ash (*Fraxinus pennsylvanica*), Black Ash (*Fraxinus nigra*), among others. A typically fern-rich ground cover will be subject to variable flooding regimes.

This mixed swamp habitat comprises the majority of the woodand habitat that occurs to the north of the CUM1 habitat and to the east of the CUT1 community. These wooded areas possess water in the spring and support a variety of fern (and other hydrophytic species) on the forest floor within the wooded swamp. The woody species above were all observed within this community, the White Birch along the edge or atop the micromounds in the wetand and Yellow Birch (*Betula alleghaniensis*) in the core of the wetland. The dominant fern species were Sensitive Fern (*Onoclea sensibilis*) and Spinulose Wood Fern (*Dryopteris carthusiana*). Some minor areas contained Buble Fern (*Cystopteris bulbifera*). The wooded swamp can be aerated/dry by late June of July each year, however, the high water table condition can support the wooded swamp vegetation even if it is below the surface.

6. Mineral Thicket Swamp (SWT2)

According to the ELC, a Mineral Thicket Swamp must contain greater than 25% tree and shrub cover and be dominated by hydrophytic tree and shrub species. It can experience variable flooding regimes and would possess 20% or more vernal pooling. During the drought periods in the late summer, the vernal pools can be dry.

The Mineral Thicket swamp conditions occur in between the CUT1 and CUM1 communities. It was likely part of the SWM1-1 community described above. Thicket swamp conditions typically occur in areas which were previously disturbed along the edge of wetlands, which is consistent with the thicket conditions on-site. The thicket area is dominated by Red-osier Dogwood (*Cornus sericea*) and minor amounts of willows - Pussy Willow (*Salix discolor*) and Meadow Willow (*Salix petiolaris*).

The proposed development will not occur within the Mineral Thicket Swamp habitats on the subject property.

7.3 Fauna

All faunal species identified during the site inspections were recorded. The list of faunal species observed at the site is presented in Appendix H. Relevant observations of faunal activities on and adjacent to the site are briefly discussed below.

7.3.1 Avifauna

ORE staff completed six (6) migratory bird/breeding bird inspections- four (4) diurnal in the early morning period and two (2) nocturnal in the evening period. The remaining three (3) inspections, although somewhat useful in detecting avian, were either completed early on in the shoulder season of the migratory period (March - initial site visit) or to install/retrieve the bat detectors in the late summer period (August).

Although all species were detected and recorded according to their vocalizations and/or sightings, the focus was on detecting Species at Risk avian, either on or directly adjacent to the site.

No SAR avian were detected in the vicinity of the proposed severance lots or the immediate adjacent lands.

7.3.2 Herptiles

Herptiles include amphibians, salamanders, lizards, turtles and snakes species. Both diurnal and nocturnal searches were conducted in the habitats on-site that these species could occur.

ORE staff viewed beneath wood debris, scanned the nearby wetland to detect aquatic herptiles and inspected County Road 32 for road-kill, in order to determine which herptile species are present on or near the subject site and potentially whether there is a common crossing area on the roadway. The main focus of the surveys was to detect those herptiles listed within SARO.

Only common species were overheard or observed. These are listed within Appendix G.

7.3.3 Mammals

Mammals include species such as fox, coyote, white-tailed deer, racoon, skunk, bats, etc.

The ESA lists very few species of mammal within south-central Ontario as either Endangered, Threatened, or Special Concern. The majority of the listed mammals that have statuses occur within Northern and Southern Ontario regimes. Very few of those mammal species listed within SARO occur in the Peterborough region, other than certain bats and Mountain Lion (*Puma concolor*).

An ORE staff member observed Mountain Lion several years ago in a field directly east of the Rotary Greenway Trail, between the trail and Douro Eighth Line near the former bus depot. The Mountain Lion was crouched low and stalking prey in the field when

observed. The occurrence was more than a kilometer south of the proposed severances, however, provides context on how local this species is to Peterborough area.

ORE staff installed bat detectors on-site between August 4th and 11th, 2021 to determine whether any threatened or endangered bat species occur. The two (2) Anabat Swift bat detectors deployed at the site recorded a total of 6,134 sound (.wav) files, over seven (7) nights. The sound files were processed using SonoBat 4.4.1 North America. The software's built-in algorithm assign each call with a confidence level for the purpose of compiling a quick inventory of individual species.

One of the detectors (BD3) only recorded noise throughout the deployment period, with no identifiable bat species recorded. In contrast, detector BD4 produced 633 auto-identifiable sound files, consisting of 450 files attributed to Big Brown Bat (*Eptesicus fuscus*), 94 files attributed to Silver-haired Bat (*Lasionycteris noctivagans*) and 89 files attributed to Hoary Bat (*Lasiurus cinereus*). A summary of the data is presented in Appendix H. In addition, two (2) sound files from BD4 were found to contain a relatively high probability (i.e., >50%) of calls originating from Tri-coloured Bat (*Perimyotis subflavus*), considered a SAR. While variations in the calls from common species of bats may appear similar to the software's algorithm, the files have not been manually vetted to determine presence/absence. Regardless, although it is possible that this SAR utilizes the general habitat, the minor occurrence (i.e., representing only 0.15% of identifiable calls) suggests that this species (if actually present) does not use the habitat repeatedly for roosting and may simply be passing through to forage or migrating within the riverine corridor.

7.4 Endangered - Threatened or Provincially Rare Species

ORE staff completed a thorough search of all potential SAR on the subject property when conducting the inspections. This included efforts to identify Butternut and any of the database provincially rare species. No SAR were identified on-site during the inspections.

The wetland area to the north of the proposed severances is not considered suitable habitat for turtle species. No turtle nests were observed on-site during the inspections. Turtle nests have been observed by ORE staff north of the subject site where County Road 32 crosses a small embayment near Lock 25 and Hickey Road. The nesting sites on the side of the trail occur more than 1 km north of the proposed severances.

No SAR snakes were observed on-site. ORE staff looked beneath any downed woody debris and artificial cover objects on-site in an effort to detect early morning and evening basking snakes. Snakes can cover a large area during the spring and summer period, but tend to come back to the same hibernaculum each year. The site does not appear to possess fractured bedrock openings that would be considered hibernaculum of

snakes. This type of habitat occurs closer to the Otonabee River, off-site.

One (1) of the bat detectors installed on the subject site detected Tricoloured Bat which is an Endangered species according to the Species at Risk Ontario (SARO) website. The detection was a very brief encounter and not detected again. Considering the Otonabee River is a migration route for many species, it is likely that the Tricoloured Bat was not roosting on the subject property, but simply migrating through the riverine corridor and taking advantage of the tree cover. Consequently, it appears the Endangered bat species was not utilizing the subject site on a continuous basis.

8.0 Significant Wildlife Habitat Assessment (SWH)

The assessment of SWH is divided into five (5) broad categories, consisting of Seasonal Concentration Area of Animals; Rare Vegetation Communities; Specialized Habitat for Wildlife; Habitat for Species of Conservation Concern (other than Endangered or Threatened), and Animal Movement Corridors. A summary table is provided in Appendix J indicating the potential for SWH to occur based on the criteria provided by the MNDMNR and whether the site has suitable habitat and/or species occurrences. The following provides a discussion of areas deemed to be confirmed SWH (based on the MNDMNR criteria) and as indicated in Appendix I.

The SWH in the area of the subject parcel and immediate surrounding lands is summarized below:

- Raptor Wintering Area
- Waterfowl Nesting Area
- Woodland Raptor Nesting Habitat
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

The Raptor Wintering area would be associated with the fencerow and woodland areas of the site associated with the trail area and the dominant tract associated with the unevaluated wetland. Raptors would utilize the White Pine and Cedars in the wooded swamp/fencerows for cover during the winter period and then perch in the deciduous trees along the woodland edge and forage.

The waterfowl nesting area would be associated with the Otonabee River and not directly on the subject site or in the area of the proposed severances. There are no on-site ponds or marshlands in the southern lobe of the subject property, just the wooded swamp and thicket swamp communities. There may be other marsh habitats elsewhere on the property, however they would be at a significant distance to the proposed developments.

The Woodland Raptor Nesting SWH would be associated with the unevaluated wetland

feature on the subject site. Raptors could nest in the mature deciduous and coniferous trees within this tract. No stick nests were observed in the trees within 100 m of the proposed severances. The remainder of the woodland areas could contain raptor nests.

The woodland and woodland edge associated with the unevaluated wetland would be suitable SWH for Woodland Raptor nesting and Bald Eagle and Osprey Nesting, Foraging and Perching Habitat during the breeding period. The tall, large diameter Pines in the area of the unevaluated wetland and trail system proximal to the river are ideal vantage points to detect prey in the aquatic habitats. ORE staff did not observe nor detect Eagle or Osprey in the area of the subject site, nor were any large stick-nests observed within the southern lobe of the subject property.

Mitigation for SWH is provided in the 2014 Significant Wildlife Habitat Mitigation Support Tool (SWHMiST). Mitigation is provided in the following sections and has regard for the tools outlined for Ecoregion 6E.

A brief description of the confirmed SWH on and immediately adjacent to the property is provided in Appendix J.

9.0 Impact Assessment

9.1 Sensitive Features

The main receptor with respect to potential impacts associated with future development of the subject site is the unevaluated wetland and Otonabee River watershed. Potential impacts considered herein include the following:

- Potential impacts for lot owners to encroach into the unevaluated wetland;
- Potential impacts to the water quality of the unevaluated wetland and/or Otonabee River from septic effluent;
- Potential impacts to Local SWH;
- Potential impacts to runoff water quality from erosion and sedimentation during the construction phase;
- Potential impacts to the unevaluated wetland and/or the Otonabee River from vegetation removal/ degradation;
- Potential impacts from importation of fill to the site to raise areas of the lots for development; and,
- Potential impacts from introduction of invasive non-native species in the post construction era via imported materials.

Specific recommendations for mitigating potential impacts to sensitive features on and adjacent to the site are provided in a following section.

9.2 NHIC Species

According to the NHIC, the following SAR have been detected in the 1 km square areas that the subject site falls within:

- Eastern Meadowlark
- Bobolink
- Snapping Turtle
- Northern Map Turtle
- Eastern Musk Turtle
- Wood Thrush
- Blanding's Turtle

The subject site does not possess suitable habitat for either the Eastern Meadowlark nor the Bobolink, as the cultural meadow is insufficient in size to support these two (2) agricultural avian SAR. As for the SAR turtles, any of them could occur in the Otonabee River system. Both Blanding's Turtle and Snapping Turtle have been observed by the property owner in the area of the Hickey Road embayment. However, no turtle sightings or nesting sites (either old or fresh) were observed in the area of the proposed severances. It is likely due to the steep bedrock embankments along the Otonabee River which acts as an impediment/barrier for turtles to access the site. That being said, there is always the potential for turtles to access the site via a less steep slope alongside County Road 32 or via the wooded swamp during the spring season when water levels are high.

ORE staff have observed the Northern Map Turtles on shoals/boulders within the Otonabee River north of Lock 25, although not in the section of river south of the lock.

The woodland between the subject site and the commercial greenhouse operation on the proponents retained lands is suitable habitat for Wood Thrush, however, this species was not detected this year. A similar calling thrush species was overheard in this woodland - Veery (*Catharus fuscescens*). However, Veery is a common/secure species and not listed by Species at Risk Ontario (SARO).

9.3 Ontario Breeding Bird Atlas (OBBA)

The following species of SAR avian were detected in the general vicinity of the site during OBBA surveys:

- Eastern Wood-Pewee - possible in unevaluated woodland, but not detected.
- Barn Swallow - habitat is not suitable in the vicinity of the proposed severances. Could occur in the area of the greenhouse on-site.
- Wood Thrush - possible within the unevaluated wetland secondary

succession woodland habitat, however, it tends to occur in upland woodlands.

- Eastern Meadowlark - unlikely due to there being no hay field habitat in the proposed development area. Cultural meadow is too small in the area of the proposed development.
- Bobolink - unlikely due to there being no hay field habitat in the proposed development area. Cultural meadow is too small in the area of the proposed development.
- Grasshopper Sparrow - unlikely due to there being no hay field habitat in the proposed development area. Cultural meadow is too small in the area of the proposed development.
- Black Tern - unlikely to nest in the area due to there being no shallow reedy marshlands in the vicinity of the proposed severances.
- Canada Warbler - marginal and unlikely as there is no appreciable coniferous vegetation rim directly along the Otonabee River waterfront.
- Least Bittern - unlikely to nest in the area due to there being no shallow reedy marshlands in the vicinity of the proposed severances. May migrate within the riverine corridor or occur in the marshland area of Hickey Road.
- Bank Swallow - No embankments on-site and the embankments along the river frontage are bedrock and inaccessible. Minor overburden overtop of bedrock but not appreciable enough for Bank Swallows.
- Bald Eagle - Possible, as there are tall trees along the Otonabee River that this species could nest and/or perch and forage from. Nests not detected during the surveys on-site.
- Cerulean Warbler - no appreciable tract of upland deciduous woodland on the subject site that this species would nest within. Possible migration within the river corridor to access large tract woodlands in the Stoney and Clear Lake areas.
- Chimney Swift - no existing structures in the vicinity of the proposed severances that would be suitable nesting habitat. Possibly observed in the area of the existing farm buildings in the area or utilizing the corridor to access the stacks in Lakefield.
- Common Nighthawk - No scrubby rock barren habitats in the area of the proposed severances. Could utilize the river corridor to access these habitats on Stoney and Clear Lake system. Known to occur at the east end of Stoney Lake.
- Eastern Whip-poor-will - Mixed deciduous and coniferous woodlands associated with the unevaluated wetland tract. Potential to groundnest and forage within this feature. Not observed during the diurnal searches nor overheard in the clear evening hour inspection periods.

Among the species listed above, the most likely candidate to occur on-site would be Eastern Wood-Pewee, however, this species was not overheard during the peak spring breeding bird site visits. Considering the woodland tract associated with the

unevaluated wetland would be retained, and that the development is proposed to occur predominantly within the open field area, the potential to impact the above listed Special Concern species would be minimal.

9.4 eBird

The following species of SAR avian were detected in the general vicinity of the site according to the eBird database:

- Barn Swallow
- Bank Swallow
- Eastern Meadowlark
- Bald Eagle

None of these species were detected on-site during the peak breeding bird period, nor were nests of any of the four (4) SAR avian detected within 100 m of the proposed development area. Only common/secure species of avian were detected on the subject property in the area of the proposed severances. Considering the majority of the trees and wooded areas will be retained for any migratory species utilizing the riverine corridor, the potential to impact any of the above mentioned SAR would be very low.

9.5 iNaturalist

The majority of the SAR detected in the iNaturalist database have already been discussed in the previous database sections.

The only SAR that has not been discussed above is Monarch. Monarch could occur on the subject site from time to time. Its favourite larval food plant does occur in the area of the proposed severances.

ORE staff completed surveys for Odonates and Lepidopterans on the subject site and did not observe Monarch, nor were any of the larvae observed on the milkweed specimens observed within cultural meadow conditions on-site. Milkweed is plentiful throughout the area within the local farm areas and ditches along the Otonabee River.

Considering there is an abundance of milkweed on-site and in the surrounding areas associated with the Otonabee River, threats to Monarch would be very low from the perspective of the proposed severances.

9.6 Significant Wildlife Habitat

Potential SWH were examined on-site and confirmed using the MNDMNRF criteria. The following SWH have been compiled based on the types of vegetation present on the property:

- Raptor Wintering Area
- Waterfowl Nesting Area
- Woodland Raptor Nesting Habitat
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

The above mentioned SWH seem to be predominantly associated with the river's edge and unevaluated wetland/woodland habitats in the southern lobe of the subject property, and therefore, provided mitigation is applied to the proposed development that avoids and retains these habitats, the development would not interfere with any of the above listed SWH.

Included below are specific recommendations for avoiding negative impacts to the features listed above.

9.7 Identified SAR/SAR Habitat

No SAR were detected on-site. Although there may be small areas of potential habitat on the property associated with the wooded swamp and upland woodlands on the retained lands, the species do not appear to be utilizing these areas. If the habitat were satisfactory for these potential SAR, they would have been present during the inspections. The majority of the SAR that could utilize the habitat would likely be Special Concern woodland species. Regardless, provided it is possible to avoid and retain the woodland, the habitat would always be available for these woodland related avian.

The Otonabee River represents a movement corridor for turtles including SAR turtles. The two (2) lots are being proposed well back from the Otonabee River and there was no sign of turtle activity during the peak period to detect turtles. The nearest turtle activity was in the area of Hickey Road, well to the north of the proposed severance lots. The steep rocky shoreline slopes, directly downgradient of the subject site is the most likely reason for the lack of nesting activity in the southern portion of the site. Similarly, the concrete walls and steep slopes associated with east shoreline of Lock 25 is also likely why turtles do not cross the road near the proposed severances. Therefore, if the turtles are unable to access the property in this area due to the bedrock barrier and concrete walls of Lock 25, the possibility of turtles being impacted by the proposed developments is very unlikely.

9.8 Fisheries

Potential impacts to fisheries within Otonabee River would mainly be in the form of the following:

- removal or degradation of the unevaluated wetland vegetation which is predominantly a localised isolated feature, however, could drain northward to the embayment near Hickey Road;
- insertion of fill materials next to the unevaluated wetland and within lands that overland flows could drain towards the Otonabee River, and
- heavy-duty equipment noise and/or possibly blasting (if basements are proposed) during construction while spawning occurs in the river.

No SAR fish species were detected within the waterway during the shoreline assessments nor were any detected in the provincial Fish ON-Line database. However, the worse-case approach should be taken with respect to fisheries, as the river likely possesses spawning habitat and/or an avenue for spawning fish to reach their spawning areas upgradient of the subject property.

Recommendations to mitigate impacts to any fish and fish habitat downgradient of the subject property are presented in a following section.

9.9 Construction

General potential impacts related to eventual construction activities are listed below:

- noise and vibration from operation of equipment;
- bedrock blasting for in-ground basements, etc.;
- wetland habitat damage, vegetation removal or disturbance;
- erosion and sedimentation generated by exposed unconsolidated soils during excavation and grading activities;
- mismanagement of fill materials and presence of construction debris or waste materials during the construction period, and
- importation of materials containing invasive species that out-compete well established native species.

To mitigate the potential for impacts associated with the above, appropriate construction scheduling will need to be considered. In addition, careful attention to the limits associated with building/grading envelopes and maintaining buffers will be required.

Specific recommendations for mitigation of impacts associated with construction activities are provided in a following section.

9.10 Future Use/Occupation

Potential impacts related to future occupation and use of the site include the following:

- disturbance related to minor alterations, further clearing of land (e.g., to extend lawns, gardens, laneways, etc.) in the post construction period, and
- sensitivity with respect to potential impacts associated with servicing requirements (e.g., nutrients released by wastewater treatment systems).

General recommendations for mitigation of impacts associated with the above are provided below.

10.0 Conclusions

- 10.1 Provided the two (2) lot severances can adhere to the proposed setback requirements in Figure 7, the lots should be permitted as the proposed developments can meet the local Planning and Growth Plan requirements for all identified KNHF's on-site.

The main concern with respect to the proposed lots is respecting the setback limits from the Otonabee River, unevaluated wetland and ensuring that any proposed construction remains outside these features. A set of detailed recommendations is provided in the following section that prevents these sensitive KHF's from being impacted by creation of the lots and future construction of the residence and any outbuildings on the lots.

- 10.2 Avian surveys were conducted in the early morning and evening during the peak Breeding Bird/Migratory Bird period. No Species at Risk avian or other fauna were identified on the property during these surveys.

Therefore, there are no requirements under the Endangered Species Act (ESA), Official Plans/PPS, or the Growth Plan with respect to Endangered or Threatened species.

No Special Concern species were detected on the subject property. Therefore, no requirements are necessary under the Significant Wildlife Habitat Mitigation and Support Tool (SWHMiST) guideline.

- 10.3 Impacts to fisheries by the proposed development are not perceived. Each residential development will be required to meet the Ontario Building Code (with respect to sewage systems). The septic system will need to be located a sufficient distance away from any wetland vegetation and Otonabee River system, such that the path length increases the residence time of the effluent in the subsurface, ensuring it is more thoroughly renovated before it reaches these features. Considering a 30 m setback is proposed to

occur off both the boundary of the unevaluated wetland, the Otonabee River and the lot line cannot occur within this feature, impacts to either of these features would be undetectable as the 30 m setbacks are twice the distance, the Ontario Building Code for Sewage Disposal Systems requires.

If blasting is necessary within the shallow bedrock, it would be best to complete the blasting outside the MNDMNR In-water Work Timing Window Guidelines for fish that could be spawning in the river. The spring period timing window would be March 15th to July 15th each year for all species that could occur in the river. The salmonid spawning period in the fall would not apply as the majority of the fish species were warmwater related.

Additional recommendations are provided below with respect to sewage disposal on each lot.

- 10.4 Both the subject site and surrounding neighbouring parcels possess SWH; the list is provided above and the recommendations (below) should be included that mitigate both direct and indirect impacts to these habitats and adhere to the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST). The majority of the SWH are associated with the unevaluated wetland/woodland tract and Otonabee River system, and therefore it should be possible to meet or exceed the SWHMiST requirements as these KHF's will be protected by the Growth Plan setback requirements.

- Raptor Wintering Area
- Waterfowl Nesting Area
- Woodland Raptor Nesting Habitat
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

Mitigation should be in the form of maintaining KNHFs that support the overall SWH. Avoidance is key with respect to the maintaining the unevaluated wetland/woodland tract in the vicinity of the proposed lots, this would maintain the Raptor Wintering, Woodland Raptor Nesting and Bald Eagle and Osprey Nesting, Foraging and Perching SWH on-site. Similarly, the proponent is requesting one access off of River Road to cross the Rotary Greenway Trail in the existing opening along River Road. By doing so, this will minimize tree loss along the river thus sustaining as many of the perching trees along the river for raptor species. As for the Waterfowl Nesting SWH, the proposed severances will avoid the river habitat completely, which complies with the SWHMiST.

11.0 Recommendations

- 11.1 Considering no Special Concern, Threatened or Endangered SAR were observed on-site, the Ministry of the Environment, Conservation and Parks (MECP) was not contacted to determine if there are any permitting requirements with respect to SAR. As such, none are recommended herein.
- 11.2 ORE staff identified an unevaluated wetland along the northern edge of where the two (2) severances are proposed to occur. ORE staff located the boundary of this feature according to the Ontario Wetland Evaluation System's (OWES - for Southern Ontario) 50/50 rule as the Land Information Ontario (LIO) mapping database appeared to map this feature incorrectly. The boundary of the wetland is provided on Figure 7. The Township of Douro-Dummer Official Plan and Growth Plan requires a 30 m setback be applied to any/all KHF's. It should be possible to locate the severances such that they maintain the recommended 30 m VPA to the on-site KHF's. Figure 7 illustrates the constraints that would be associated with any new residential lots (if approved).

Provided the proposed new lots meet all of the remaining municipal Planning requirements, it should be possible to move forward with the application.

- 11.3 The septic systems should be constructed on the downgradient (west) side of the lots. If the local approval authority will authorize the installation of filter bed units to service the new lots, ORE would recommend utilizing that type of system given their smaller footprint and filtering capacity. However, installation of a filter bed unit is voluntary and is not a requirement.
- 11.4 The proposed constraints plan illustrates that the wooded areas associated with the unevaluated wetland (and 30 m VPA) to the north of the potential development area will not be impacted by the proposed severances. There is an abundance of open space (old field/meadow) to the south of the unevaluated wetland where the building envelopes can be targeted, thus retaining the majority of the wooded areas on the subject property. By avoiding the wooded swamp area, this will retain the habitat for the Woodland related SWH. It may be necessary to remove some of the Eastern White Cedar fencerow that extends from the unevaluated wetland to the south edge of the property due to the required setbacks/VPAs. The removal of the cedars would not impact any of the KNHF's on-site.
- 11.5 Proper erosion/sedimentation controls will be required at all times while heavy equipment is in operation at this site. Silt fencing (double-row) must be installed to identify the boundaries of the approved development envelopes (i.e., work areas) and to

serve as barriers to prevent construction activities from imposing on the 30 m VPA. The first row should be positioned directly along the boundary of the VPA and the 2nd row should be situated within 2 m of the 1st row on either the downgradient side of the 1st row or on the retained lands side of the VPA. Both rows should be maintained on a regular basis. The 2nd row is meant to be a secondary barrier in the event of a major failure. If eroded materials bypass either row of silt fence, the materials should be removed manually (without equipment) and reestablished in the construction zone.

Bales of straw wrapped with a suitable geotextile filter cloth should be strategically located inside the silt fencing, especially in areas where heavier sediment loads may occur during precipitation events. The clothed bales can also be used at the corners of the silt fence to improve stability. Construction should not continue during heavy precipitation events. After any such events, the fence and bales should be checked to ensure their effectiveness.

The silt fence and cloth wrapped hay bales provide a solution to mitigate sheet runoff, not concentrated flows. Therefore, if a concentrated flow results from the construction, another type of erosion/sedimentation control (e.g., rock check dam with geotextile filter cloth) may be needed to ensure that sediment is contained within the construction area. ORE staff do not expect concentrated flows to occur on the site. The above should only be necessary if the contractor fills the area or does significant grading.

If filling is necessary, the volume and areas should be illustrated on the Site Plan/Grading Plan. No fill materials shall be placed within the KHF's or their VPA's other than what is necessary to construct the access road off of County Road 32.

Any imported fill should not contain organic materials such as plant debris or topsoil that may contain exotic or invasive species. If imported topsoil is required, screened topsoil should be the only material applied as top dressing.

The recommendations above will also prevent impacts to the unevaluated wetland which drains to the Otonabee River which represents significant fisheries habitat. The proposed lots and development footprints will be situated more than 30 m from the Otonabee River and/or the unevaluated wetland. Provided this distance is maintained and the above mentioned standard erosion-sedimentation controls are implemented, neither KHF will be impacted.

- 11.6 There is the potential for bird species to be impacted during their nesting, breeding and fledging stages, as a consequence of clearing/vegetation removal. To mitigate the potential for such impacts, the property owner must not conduct any vegetation removal between April 1st and August 31st, corresponding to the main Breeding Bird period under the Migratory Bird Convention Act. This is a standard requirement for all construction. Provided the vegetation is removed prior to this period, the remainder of

the construction within the building envelopes can proceed within the Migratory bird/breeding bird period.

This window should also apply to any potential blasting within the shallow bedrock surface as part of the construction. Blasting can have a profound impact on nesting-breeding bird species during the peak period. Therefore, if blasting is proposed on-site, it should occur either before April 1st or after August 31st each year.

In addition to the breeding/migratory bird window above with respect to potential blasting, the yearly fish spawning March 15th to July 15th MNDMNRF “In-water Work Timing Window” would be applicable. Therefore, the overall window for no blasting would span March 15th to August 31st each year when the two (2) windows are combined.

If blasting is proposed, the blasting contractor should determine whether there is the potential for any blast holes to take on surface and/or groundwater in the spring period via fractures connected to the unevaluated wetland feature. Therefore, the viability of basements on the lots should be determined prior to any blasting.

- 11.7 The property possesses wooded swamp SWH associated with the on-site unevaluated wetland. According to the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST), avoidance is the primary mitigation tool.

In this instance, it should be possible to avoid the unevaluated wetland SWH by directing the building envelope on each lot within the open old field areas on-site as illustrated in Figure 7. A 30 m VPA is to be applied to the on-site unevaluated wetland, therefore, this SWH/KHF will be avoided altogether and a new vegetation protection area established between the lots and the SWH. The 30 m VPA goes beyond what is required in the SHWMiST and therefore complies with Mitigation Support Tool.

By directing the development within the existing open space on-site, it also inherently benefits the significant fisheries within the Otonabee River. The application of the 30 m VPA will also improve conditions for both the unevaluated wetland and downgradient fish and fish habitat within the river. If a setback is required off the Rotary Greenway Trail to ensure future development does not encroach on the trail system, this may set the development further back from the river than the proposed 30 m VPA, which would further benefit the fisheries and SWH associated with Otonabee River system.

- 11.8 Following the construction, any/all disturbed areas shall be quickly seeded or sodded with native grass species to re-establish the root structure within the upper soils. Once the seeding or sodding is determined to be a success and the soils are stable, the

erosion/sedimentation controls can be removed.

- 11.9 As part of the application package, the proponent shall provide the authorities with a survey of the proposed lots once their limits have been determined based on the constraints outlined in this NHE. An Ontario Land Surveyor (OLS) shall provide a survey that includes the limit of the KHF's and their associated VPAs on the Site Plan. If the severances are approved, the OLS shall return to the site and stake the lot boundaries, so the authorities and/or prospective purchasers can review them on-site. ORE staff can either provide the constraints layers to the OLS and/or demarcate the boundary of the KHF's on-site and the OLS can offset/apply the recommended VPAs.
- 11.10 Provided the recommendations outlined in this NHE report are adhered to, impacts to the KNHF/KHF and localized SWH identified on Figure 7 should be undetectable. Given, that all of the sensitive features identified on the site will not be impacted provided the mitigation measures are applied, then it should be possible to create two (2) new residential lots on the subject parcel, outside of the KHF and their VPAs.

The recommendations in this NHE should form the basis of a Mitigation Measures Agreement (MMA) between the lot owner and the Municipality/County, prior to the severances being created. The Mitigation Measures Agreement should be registered with each lot to ensure no matter who owns the lot, the natural heritage and hazard lands requirements outlined in this report will be respected. The MMA should also include additional requirements with respect to the post construction impacts. Alternatively, the authorities may choose to apply the above mentioned recommendations through a combination of site plan control/requirements and zoning, and an MMA may not be necessary.

* end of report *

Yours truly,
Oakridge Environmental Limited

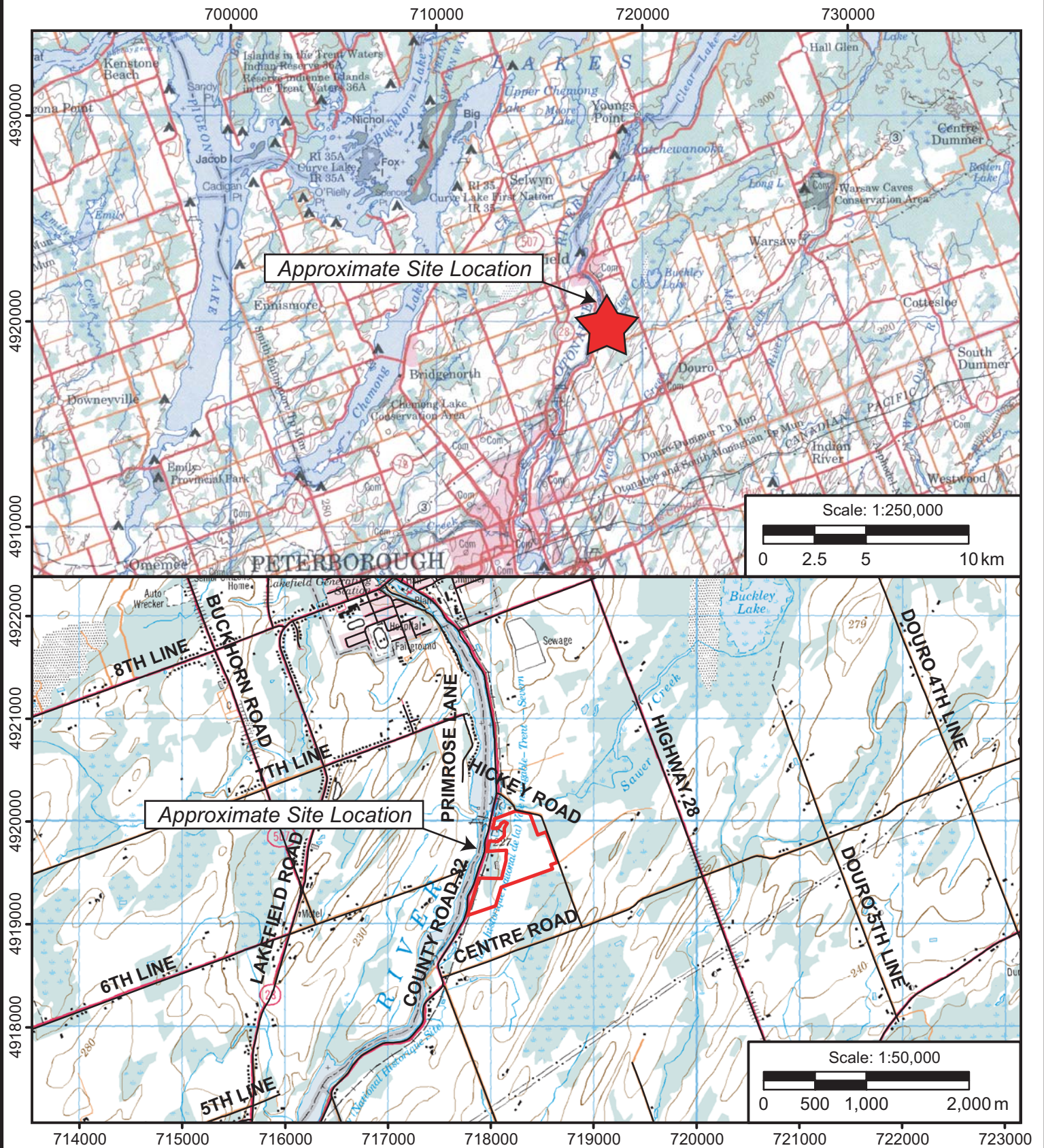
Original Signed By

Rob West, HBSc.
Senior Ecologist

Selected References

- Argus, G.W. and K.M. Pryer.** 1982-1987, "Atlas of the Rare Vascular Plants of Ontario". Four Parts. National Museum of Natural Sciences, Ottawa, Ontario.
- Austen, M.J. et. al.** 1995. "Ontario Birds at Risk Program". Federation of Ontario Naturalists and Long Point Observatory. 165 pp. OBAR website.
- Bezener, A.** 2000. "Birds of Ontario". Lone Pine Publishing. 376 pp.
- Bakowsky, W.**, 1995. "S-ranks for Southern Ontario Vegetation Communities". OMNR, Natural Heritage Information Centre, Peterborough, ON. 11 pp.
- Bellrose F.C.** 1976. "Ducks, Geese and Swans of North America". Stackpole Books
- Cadman, M.D. et. al.**, 2007, "Atlas of Breeding Birds of Ontario", OBBA website, 2nd Edition (2001-2005).
- Cheskey, E.D.** 1995. "Towards Conserving Birds of Ontario". Federation of Ontario Naturalists. 48 pp.
- CSW Lake Plan Steering Committee**, 2008. "A Delicate Balance: The Clear, Ston(e)y and White Lake Plan", Association of Stony Lake Cottagers & Upper Stony Lake Cottagers Association website
- Gill F.B.** 2007. "Ornithology - Third Edition". National Audubon Society, W.H. Freeman and Company.
- Habib, L., Bayne, E. M. & Boutin, S.** "Chronic Industrial Noise Affects Pairing Success and Age Structure of Ovenbirds *Seiurus Aurocapilla*." Journal of Applied Ecology 44 (2007): 176-84.
- Holmes et. al.** 1991. "The Ontario Butterfly Atlas". Toronto Entomologists Association, Toronto, Ontario.
- Holmgren, Noel H.**, "Manual of Vascular Plants of Northeastern United States and Adjacent Canada - Second Edition", The New York Botanical Garden, 1998.
- Jones et. al.** 2008. "The Dragonflies and Damselflies of Algonquin Park and the Surrounding Area." The Friends of Algonquin Park. 263 pp.
- Lee, H.D. et. al.** 1998. Ecological Land Classification for Southern Ontario -First Approximation and it's Application - SCSS FieldGuide; FG-02. OMNR, North Bay, Ontario.
- Lee, H.D. et. al.** 2008. Ecological Land Classification for Southern Ontario -Second Approximation and it's Application - Ecosystems Catalogue. Conservation Ontario website.
- Newcomb, L.**, "Newcomb's Wildflower Guide". Little Brown and Company(Canada) Limited, 1977.
- Oldham, M.J.**, 1996, "Natural Heritage Resources of Ontario, Amphibians and Reptiles", Ontario Herpetofaunal Survey (OHS), 1996, OHS website contacted August 2012.
- Ontario Ministry of Natural Resources and Forestry.** 2015. "Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E"; Regional Operations Division, Peterborough, Ontario.
- Ontario Ministry of Natural Resources and Forestry.** 2014. "Significant Wildlife Habitat Mitigation Support Tool"; Peterborough, Ontario.
- Peck G.K. & James R.D.** 1983, "Breeding Birds of Ontario Nidology and Distribution Volume 1 : Nonpasserines and Volume 2: Passerines". Royal Ontario Museum, Toronto.
- Sibley, D.A.** 2003, "The Sibley Field Guide to Birds of Eastern North America". New York: Alfred A. Knopf.
- "Species at Risk in Ontario List."** Ontario.ca. N.p., November 2015.
<http://www.ontario.ca/environment-and-energy/species-risk-ontario-list>.
- Voss, Edward G.**, "Michigan Flora - Part I to Part III"; Cranbrook Institute of Science Bulletin 55 and The University of Michigan Herbarium, 1972.

Figures



Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
 4131 County Road 32
 Part of Lot 12, Concession 8 (Douro)
 Township of Douro-Dummer
 County of Peterborough



ORE
Oakridge Environmental Ltd.
 Environmental and Hydrogeological Services

North American Datum 1983
 UTM Zone 17

TITLE

General Location

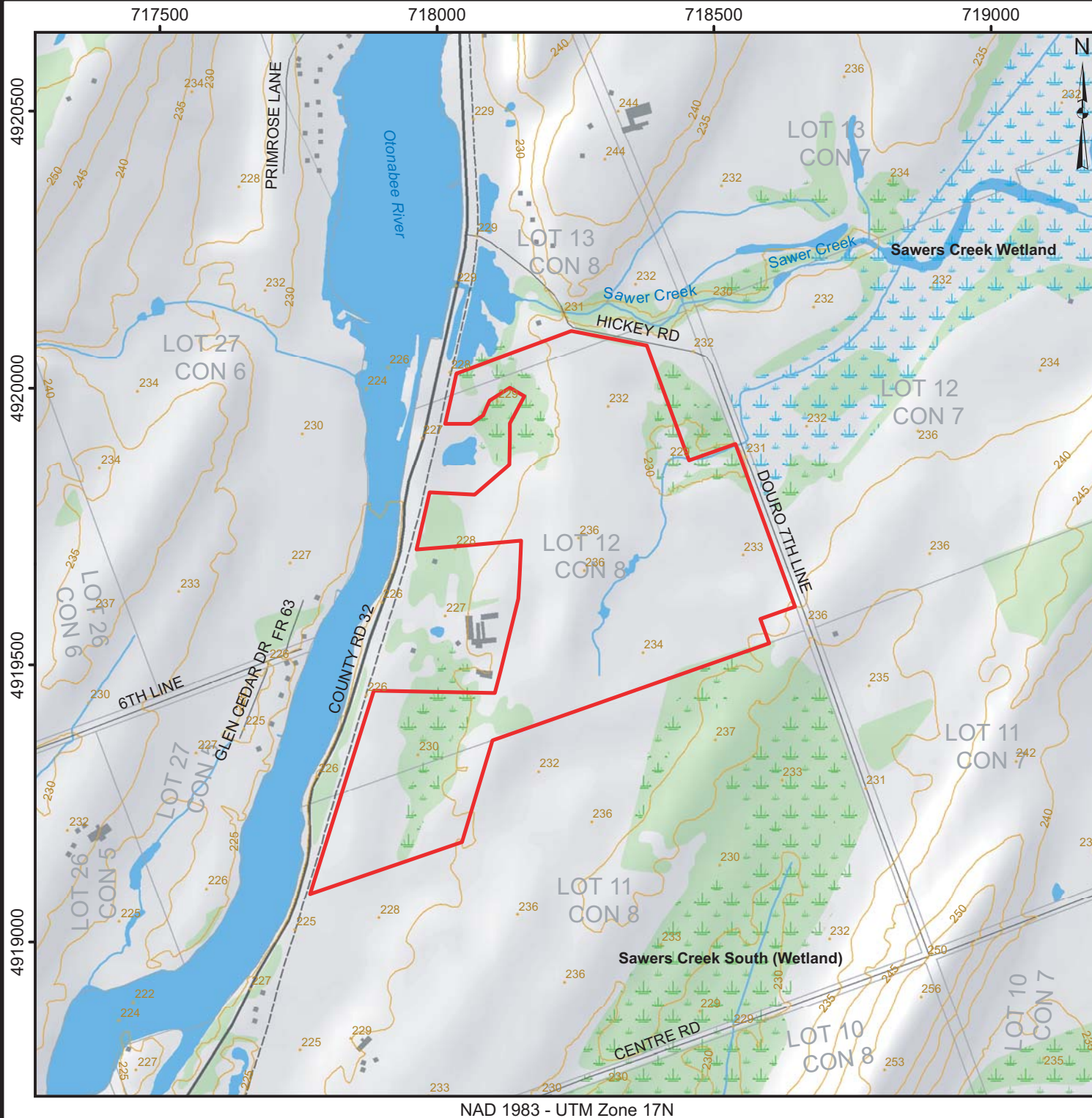
PROJECT #
 21-2882

DATE
 December 2021

FIGURE NO.

1

Notes: Base maps provided by Natural Resources Canada, NTS maps 31-D (1998) and 31-D/8 (1999).



Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
 4131 County Road 32
 Part of Lot 12, Concession 8 (Douro)
 Township of Douro-Dummer
 County of Peterborough

LEGEND

- Approximate Site Boundary
- Unevaluated Wetland
- Provincially Significant Wetland
- Watercourse
- Waterbody
- Wooded Area
- Spot Height
- Contour (5 m interval)
- Building (symbol)
- Building (to scale)
- Arterial Road
- Road
- Trail
- Geographic Lot Fabric

Scale: 1:10,000



Notes: Base map provided by Land Information Ontario (2021).

Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

Topography & Drainage



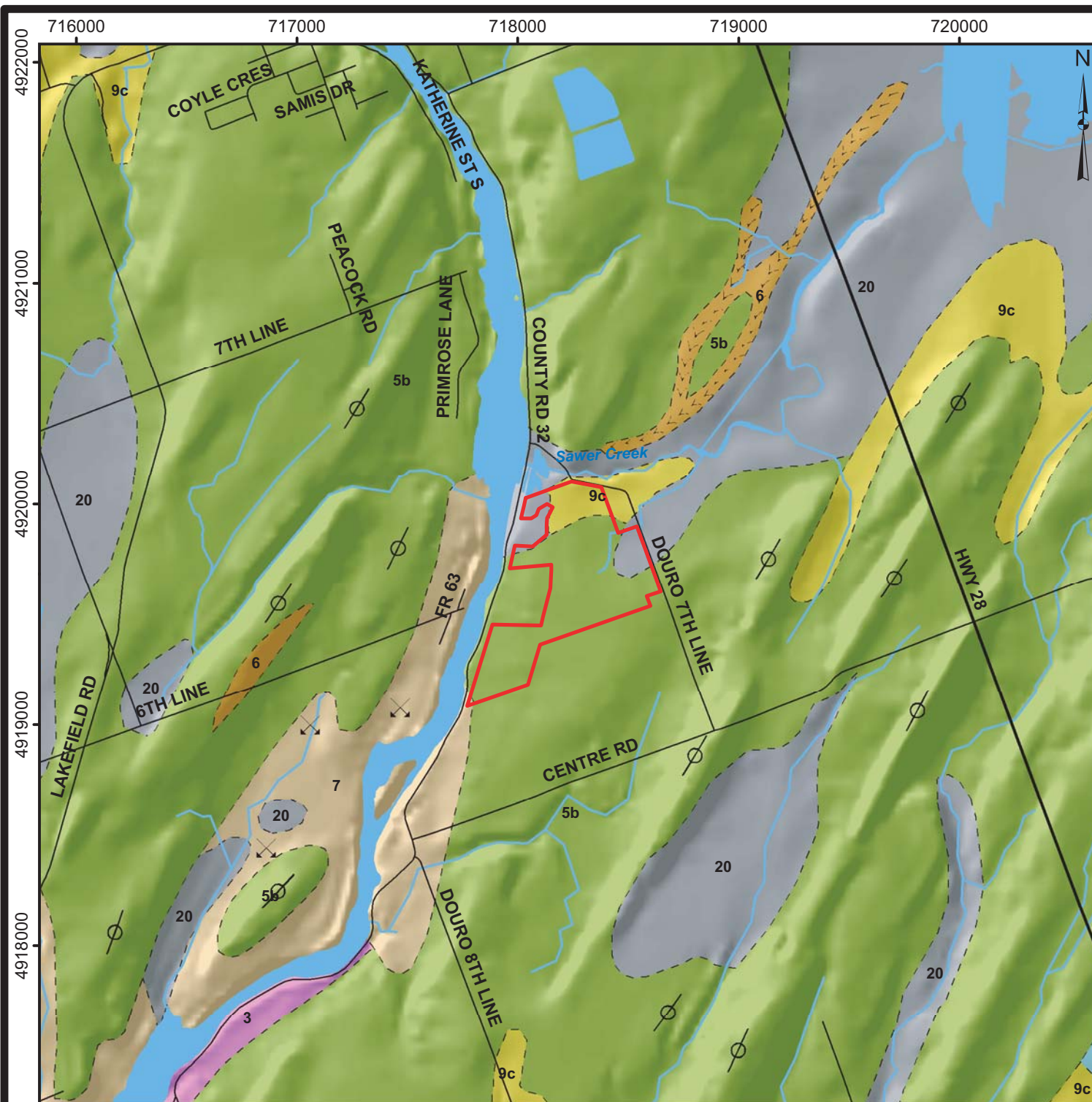
PROJECT #
 21-2882

FIGURE NO.

DATE
 December 2021

2

NAD 1983 - UTM Zone 17N



NAD 1983 - UTM Zone 17N

Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
 4131 County Road 32
 Part of Lot 12, Concession 8 (Douro)
 Township of Douro-Dummer
 County of Peterborough

LEGEND

- Approximate Site Boundary
- 3 Paleozoic bedrock
- Glacial Deposits (Till):
 - 5b Stone-poor, carbonate-derived silty to sandy till
 - 6 Ice-contact stratified deposits
 - 7 Glaciofluvial deposits
- Coarse-textured Glaciolacustrine Deposits:
 - 9c Foreshore-basinal deposits
 - 20 Organic deposits
- Sand and Gravel Pit
- Drumlin or Drumlinoid Ridges
- Esker (with direction of flow)
- Geological Contact
- Road
- Highway
- Stream
- Waterbody

Scale: 1:25,000



Surficial Geology

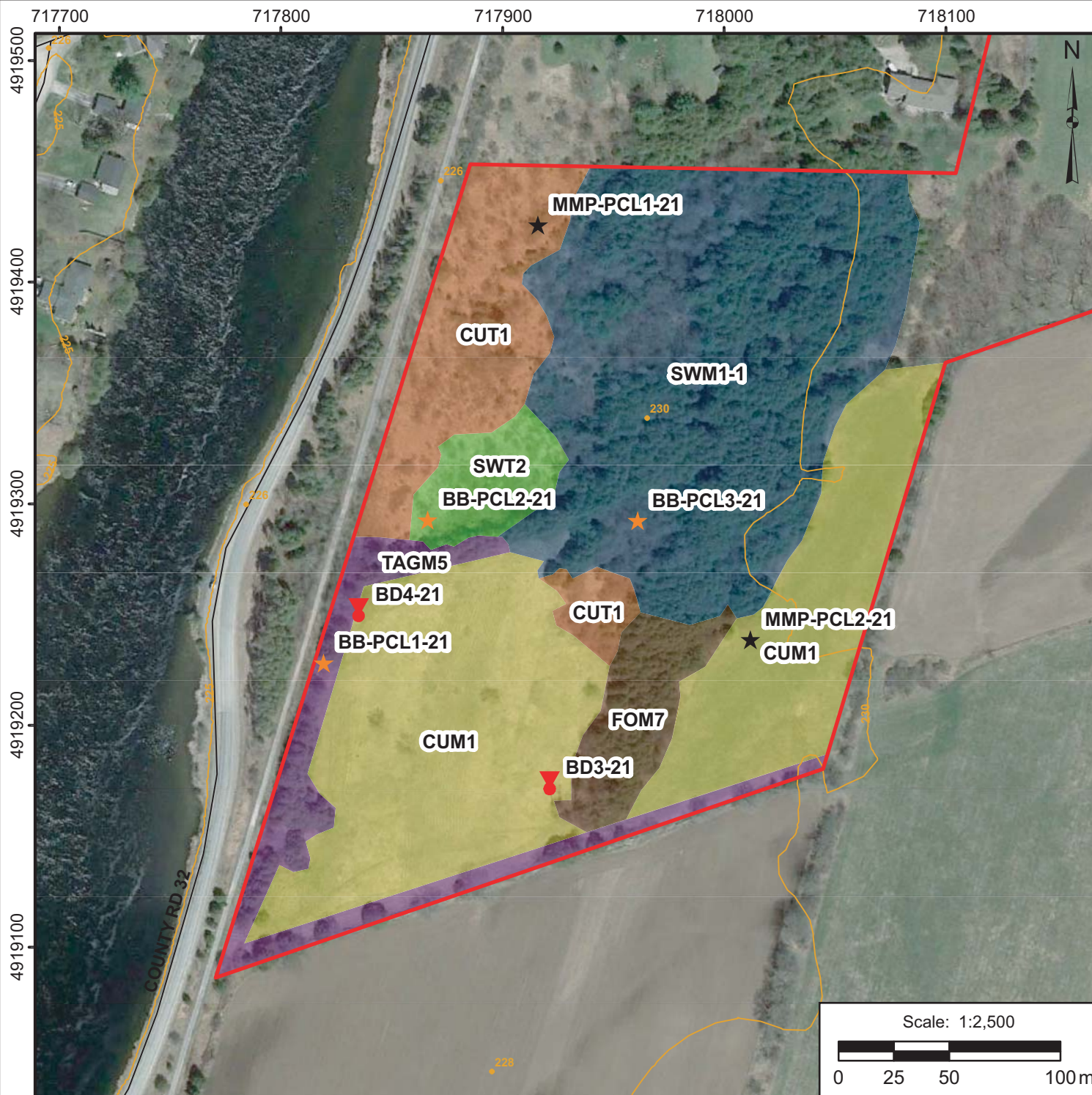


PROJECT #
21-2882

DATE
December 2021

FIGURE NO.

3



Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
 4131 County Road 32
 Part of Lot 12, Concession 8 (Douro)
 Township of Douro-Dummer
 County of Peterborough

LEGEND

- Approximate Site Boundary
- Mineral Cultural Meadow (CUM1)
- Mineral Cultural Thicket (CUT1)
- Fresh - Moist White Cedar - Hardwood Mixed Forest (FOM7)
- Fencerow (TAGM5)
- White Cedar - Hardwood Mineral Mixed Swamp (SWM1-1)
- Mineral Thicket Swamp (SWT2)
- ★ Breeding Bird Point Count Location
- ★ Marsh Monitoring Program Point Count Location
- ▼ Acoustic Bat Detector
- Road
- Spot Height
- Contour (5 m interval)

Notes: Imagry provided by Google Earth (2018).

Base map provided by Land Information Ontario (2021).

Feature locations determined using mapping-grade differential Global Positioning System (dGPS +/- 1.5 m).

Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

Vegetation



PROJECT #
21-2882

DATE
December 2021

FIGURE NO.

4

NAD 1983 - UTM Zone 17



Photo A (Left): Photo taken looking north east towards the cleared area where the north lot would occur. The wetland boundary occurs up in that small cove in the trees and extends northwest from that location.

Photo B (Right): Photo taken looking east towards the downed trees and fencerow in the background that would be the east lot boundary. Still within the proposed north lot.



Photo C (Left): Photo taken looking towards the southeast corner of the lot. The row of cedars in the background is the property boundary. The proposed south lot would occur in this area.

Photo D (Right): Photo taken on the Trans Canada Trail looking north. County Road 32 is located just outside the photo on the left. It parallels the Trans Canada Trail. Just beyond the cedars (on the left) is where the proposed entrance for both lots would occur off County Road 32. It would cross the trail in the foreground and then split off to the north and south lot on the right side of the trail.



	Natural Heritage Evaluation (NHE) Proposed Two (2) Lot Severance 4131 County Road 32 Part of Lot 12, Concession 8 (Douro) Township of Douro-Dummer County of Peterborough		TITLE Site Photos	
			PROJECT # 21-2882	FIGURE NO. 5
Optimized for Oakridge Environmental Ltd. printing			DATE December 2021	



Photo (Left): Is of a hand auger probe that was completed within the old field habitat in the northwestern portion of the site. The soils consisted of silt till with topsoil at depth suggesting it was a former crop field. However, limestone bedrock was very closer to surface in most of the augerholes.

Photo (Right): Was taken looking north towards the fencerow property boundary. The wetland occurs in the foreground at the very tip of the old field where the open field habitat meets the woodland.

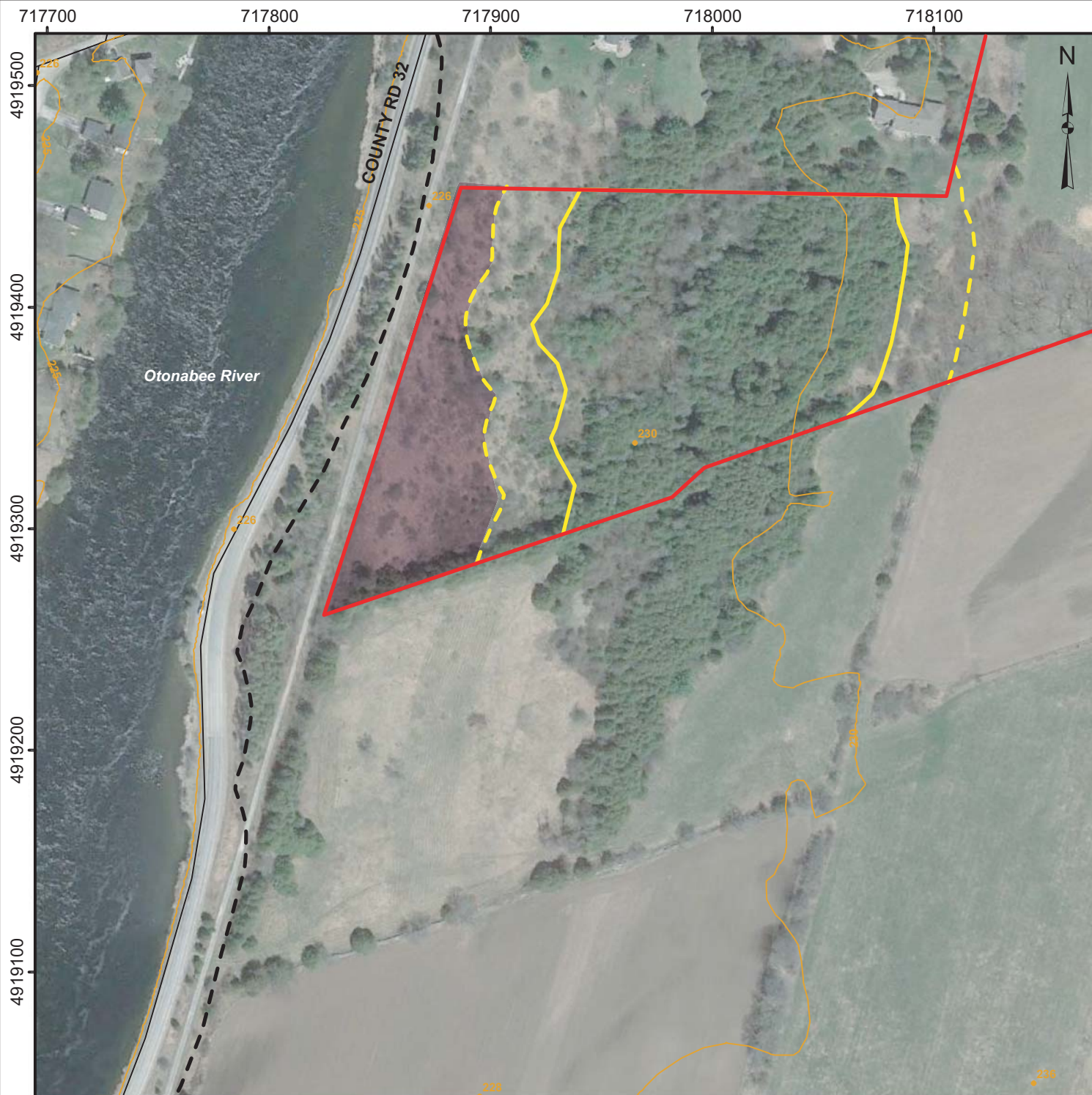


Photo (Left): Was taken along the property edge and represents the Eastern White Cedar fencerow that occurs around the southern and eastern edge of the property.

Photo (Right): Was taken on the adjacent parcel to the east looking north along the edge of the wooded swamp habitat. The wooded swamp is mainly comprised of mature Eastern White Cedar.



	Natural Heritage Evaluation (NHE) Proposed Two (2) Lot Severance			
	4131 County Road 32 Part of Lot 12, Concession 8 (Douro) Township of Douro-Dummer County of Peterborough		TITLE Site Photos	
	 ORE Oakridge Environmental Ltd. Environmental and Hydrogeological Services		PROJECT # 21-2882	FIGURE NO. 6
Optimized for Oakridge Environmental Ltd. printing			DATE December 2021	



NAD 1983 - UTM Zone 17

Natural Heritage Evaluation (NHE)
Proposed Two (2) Lot Severance
 4131 County Road 32
 Part of Lot 12, Concession 8 (Douro)
 Township of Douro-Dummer
 County of Peterborough

LEGEND

- Approximate Site Boundary
- Watercourse Setback (30 m)
- Wetland (ORE)
- Wetland Setback (30 m)
- Potential Development Area (approximately 2.6 ha)
- Spot Height
- Contour (5 m interval)

Scale: 1:2,500



Notes: Imagry provided by Google Earth (2018).

Base map provided by Land Information Ontario (2021).

Feature locations determined using mapping-grade differential Global Positioning System (dGPS +/- 1.5 m).

Floodplain provided by Peterborough County.

Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

Constraints



PROJECT #
21-2882

DATE
December 2021

FIGURE NO.

7

Appendix A

Excerpt from the Provincial Policy Statement (PPS)

The following has been copied from the 2020 Provincial Policy Statement (PPS):

“2.1 Natural Heritage

2.1.1 Natural features and areas shall be protected for the long term.

2.1.2 The diversity and connectivity of natural features in an area, and the long-term ecological function and biodiversity of natural heritage systems, should be maintained, restored or, where possible, improved, recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

2.1.3 Natural heritage systems shall be identified in Ecoregions 6E & 7E1, recognizing that natural heritage systems will vary in size and form in settlement areas, rural areas, and prime agricultural areas.

2.1.4 Development and site alteration shall not be permitted in:
a) significant wetlands in Ecoregions 5E, 6E and 7E1; and
b) significant coastal wetlands.

2.1.5 Development and site alteration shall not be permitted in:
a) significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E1;
b) significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1;
c) significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)1;
d) significant wildlife habitat;
e) significant areas of natural and scientific interest; and
f) coastal wetlands in Ecoregions 5E, 6E and 7E1 that are not subject to policy 2.1.4(b) unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions. Ecoregions 5E, 6E and 7E are shown on Figure 1.

2.1.6 Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements.

2.1.7 Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.

2.1.8 Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions.

2.1.9 Nothing in policy 2.1 is intended to limit the ability of agricultural uses to continue.”

Appendix B

Excerpt from the County of Peterborough Official Plan (OP)

The following has been copied from the County of Peterborough Official Plan:

- *“a description of the proposal and statement of rationale for the undertaking;*
- *a description of the existing land use(s) on site and adjacent lands;*
- *the land use designation on site and adjacent lands, as identified by the County and local municipal Official Plans;*
- *a description of alternative development proposals for the site as well as the environmental impacts of the alternatives;*
- *a comprehensive description of the proposal including its direct and indirect effect on the environment and considering both the advantages and disadvantages of the proposal;*
- *an identification of environmental constraint areas;*
- *an environmental inventory of the area under development consideration (plant life, land-based and aquatic wildlife, wetlands, natural landforms, surface waters, hydrogeological features);*
- *a statement of environmental and ecological significance of the area affected by the proposed development;*
- *a statement on how the development will establish or facilitate the establishment of linkages between natural areas within the watershed and adjacent watersheds and how these linkages will contribute to the preservation and enhancement of the natural areas;*
- *a detailed description of mitigating effects;*
- *any additional information requested by the local municipality;*
- *an assessment of options for servicing the development with full municipal or communal water and sewage services as well as the environmental impacts of the servicing options.*

An environmental impact assessment for proposed development within or adjacent to a significant natural heritage feature will include as its study area the natural heritage feature plus the area surrounding that feature as follows:

- *significant wetlands - all lands within 120 metres;*
- *significant portions of the habitat of endangered and threatened species - all lands within 50 metres;*
- *fish habitat - all lands within 30 metres of the high water mark of all watercourses;*
- *significant wildlife habitat - all lands within 50 metres;*
- *significant woodlands south of the southern limit of the Canadian Shield - all lands within 50 metres;*
- *significant valleylands south of the southern limit of the Canadian Shield - all lands within 50 metres;*
- *significant areas of natural and scientific interest (ANSI) - all lands within 50 metres.”*

Appendix C

NHIC Database and Species Descriptions



Looking for a Park, Reserve or Wetland? Enter the name

- About
- Bookmarks
- Map Layers
- Find Information
- Markup & Printing
- Measure

Printing

Export Map

Export Markup

Polygon

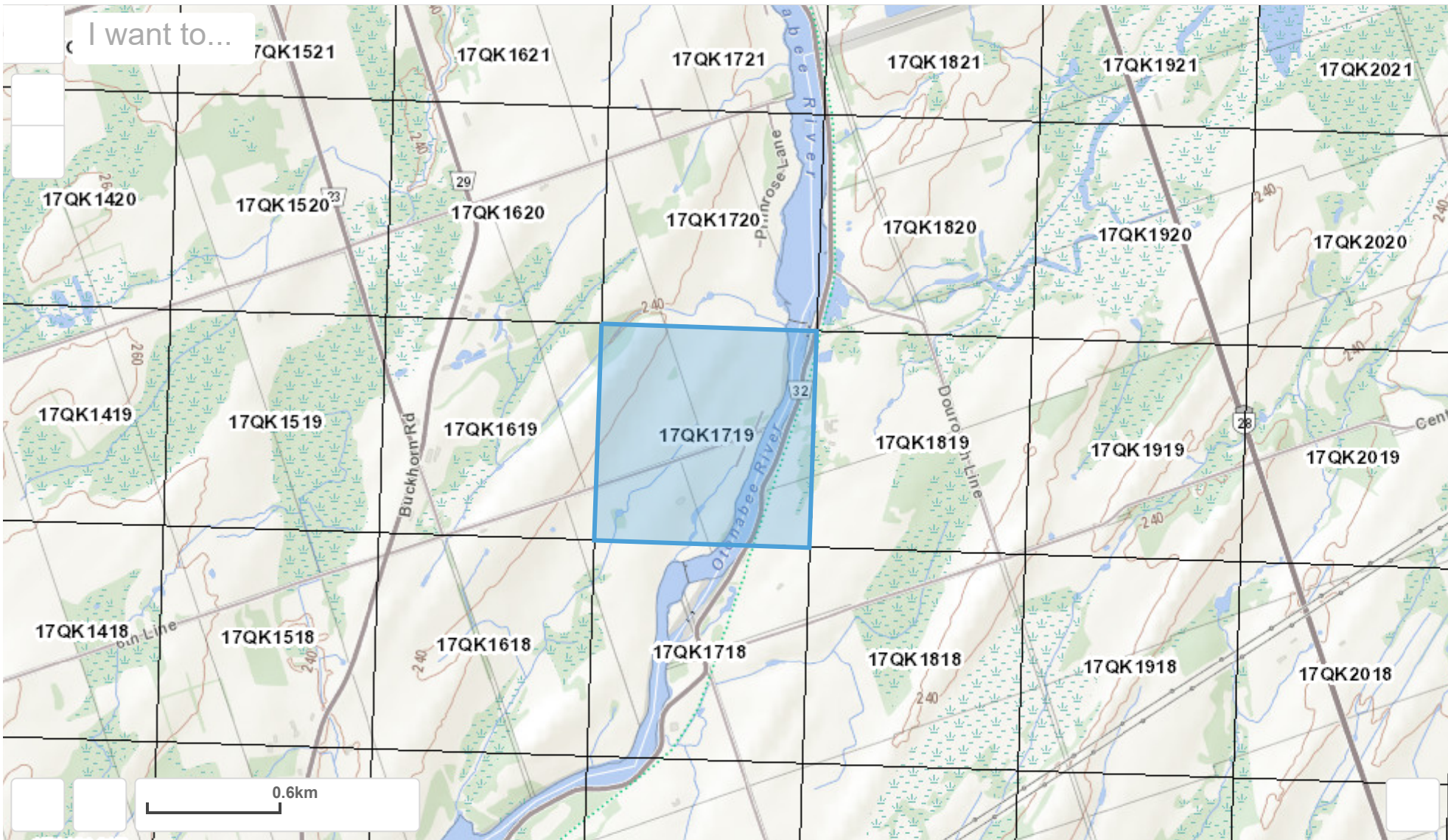
Styles

Edit

Erase

Clear All

Help



NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1059013	SPECIES	Eastern Musk Turtle	Sternotherus odoratus		SC	SC	17QK1719	
1059013	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17QK1719	
1059013	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17QK1719	
1059013	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17QK1719	
1059013	SPECIES	Northern Map Turtle	Graptemys geographica		SC	SC	17QK1719	
1059013	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17QK1719	



Looking for a Park, Reserve or Wetland? Enter the name

- About
- Bookmarks
- Map Layers
- Find Information
- Markup & Printing
- Measure

Printing

Export Map

Export Markup

Polygon

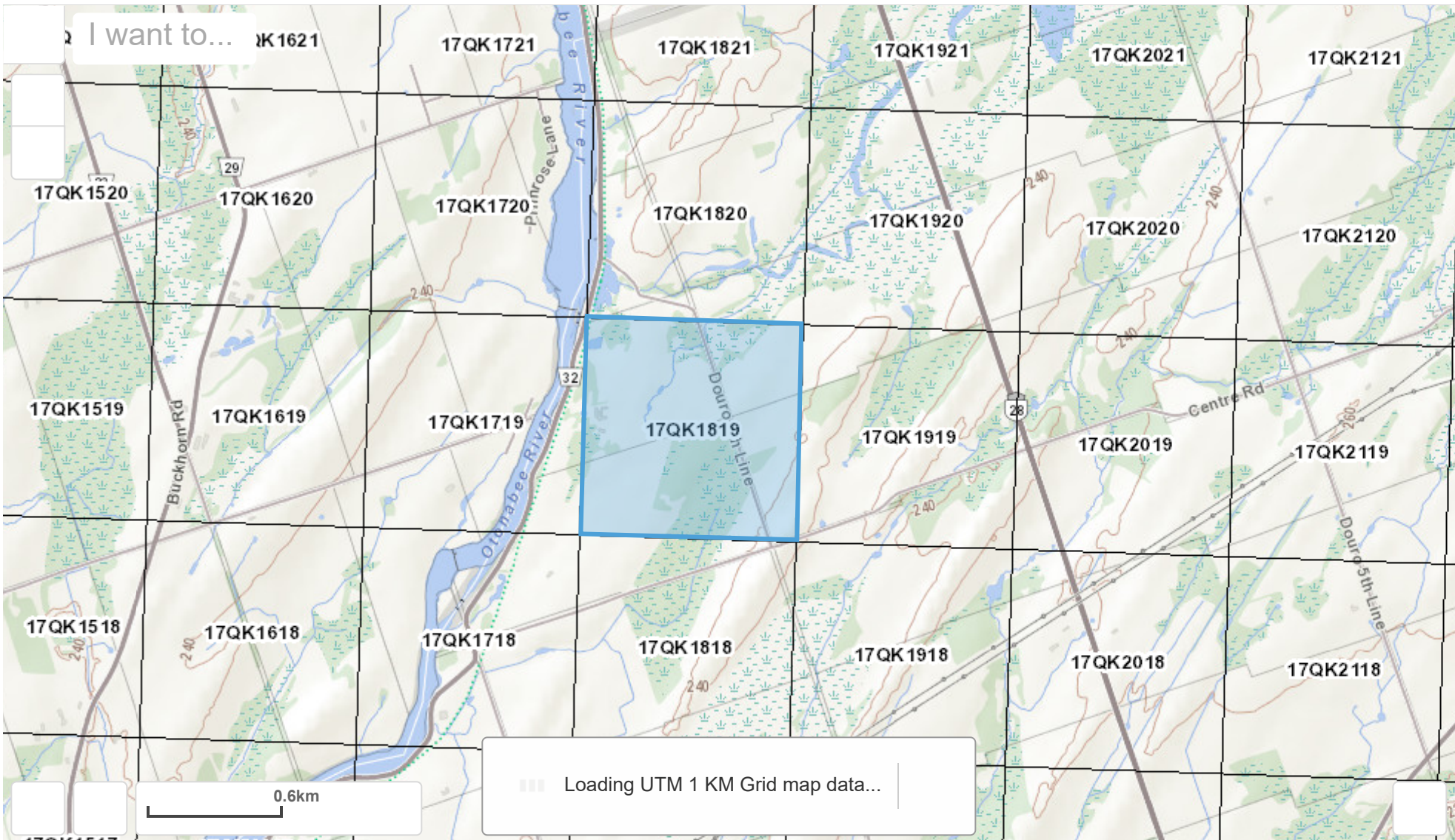
Styles

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Erase

Clear All

Help



NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1059023	NATURAL AREA	Sawer Creek Wetland					17QK1819	
1059023	NATURAL AREA	Sawer Creek South					17QK1819	
1059023	SPECIES	Eastern Musk Turtle	Sternotherus odoratus		SC	SC	17QK1819	
1059023	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17QK1819	
1059023	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17QK1819	
1059023	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17QK1819	
1059023	SPECIES	Northern Map Turtle	Graptemys geographica		SC	SC	17QK1819	
1059023	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17QK1819	



Looking for a Park, Reserve or Wetland? Enter the name

- About
- Bookmarks
- Map Layers
- Find Information
- Markup & Printing
- Measure

Printing

Export Map

Export Markup

Polygon

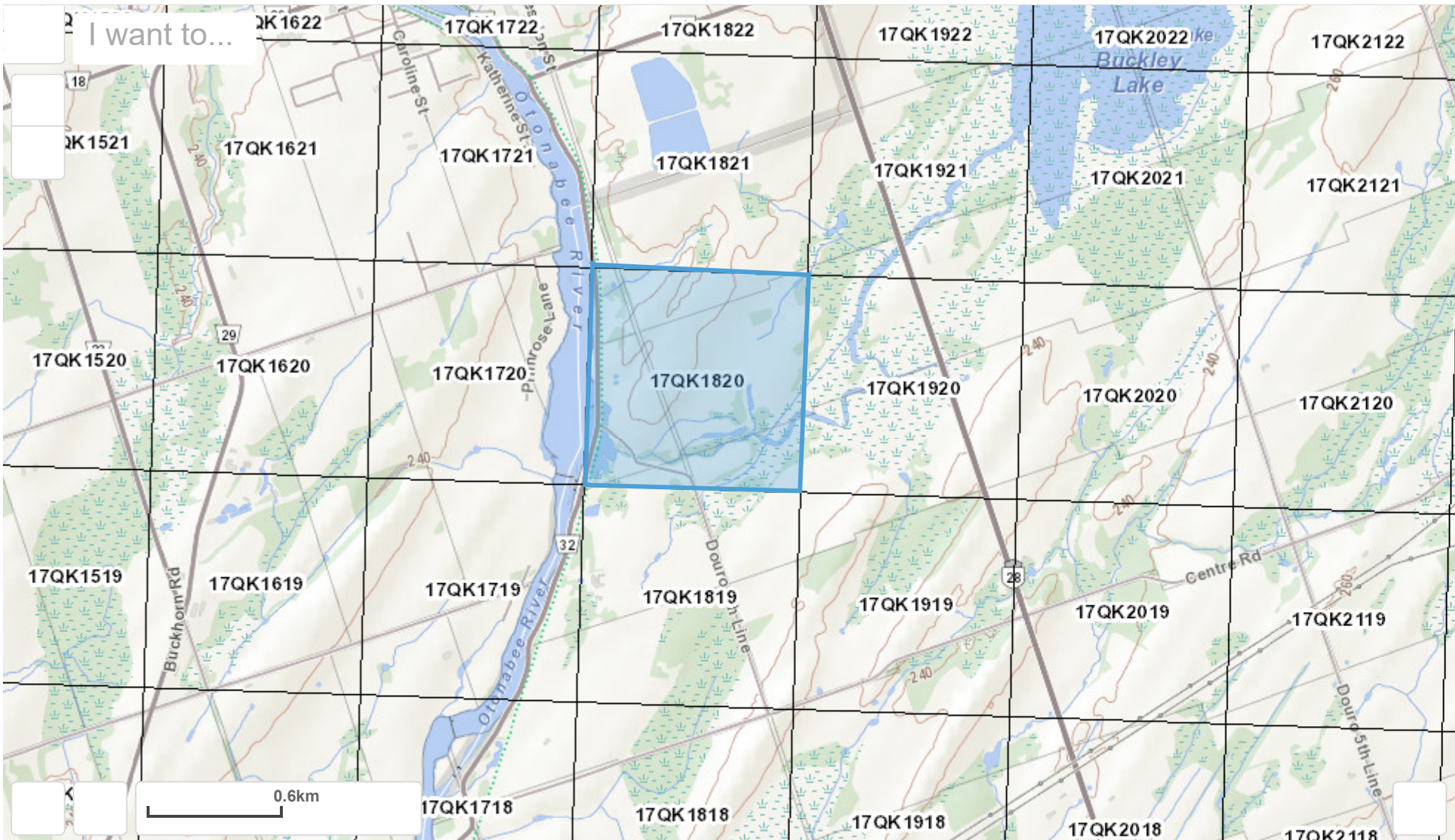
Styles

Edit

Erase

Clear All

Help



NHIC Data

To work further with this data select the content and copy it into your own word or excel documents.

OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1059114	NATURAL AREA	Sawer Creek Wetland					17QK1820	
1059114	SPECIES	Eastern Musk Turtle	Sternotherus odoratus		SC	SC	17QK1820	
1059114	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17QK1820	
1059114	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17QK1820	
1059114	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17QK1820	
1059114	SPECIES	Wood Thrush	Hylocichla mustelina		SC	THR	17QK1820	
1059114	SPECIES	Northern Map Turtle	Graptemys geographica		SC	SC	17QK1820	
1059114	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17QK1820	
1059114	SPECIES	Blanding's Turtle	Emydoidea blandingii		THR	END	17QK1820	

Bobolink (*Dolichonyx oryzivorus*) is listed as “Threatened” by *Species at Risk Ontario* (SARO) and is protected under the *Endangered Species Act* (ESA). The Bobolink prefers large tracts of tallgrass areas, either true prairies or hay fields, as it forages low to the ground in search of larvae and seeds.

Eastern Meadowlark (*Sturnella magna*) is listed as “Threatened” by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Wood Thrush (*Hylocichia mustelina*) is listed as “Special Concern” by SARO and is protected under the ESA. The Wood Thrush enjoys relatively undisturbed, mature woodlands. Nesting occurs low in the fork of a tree as this species forages for berries and insects at ground level. Similar to the Eastern Wood-pewee, this species prefers large tracts of woodland.

Blanding’s Turtle (*Emydoidea blandingii*) is listed as “Threatened” by SARO and is protected under the ESA. It tends to inhabit shallow waters within large wetlands or shallow lakes that have lots of aquatic plants. However, they have been known to travel hundreds of metres from a main body of water for nesting or mating. This species is most easily identified by its bright yellow throat and chin.

Eastern Musk Turtle (*Sternotherus odoratus*) is listed as “Special Concern” by SARO and is not protected under the ESA. Eastern Musk Turtles are found in ponds, lakes, marshes and rivers that are generally slow-moving have abundant emergent vegetation and muddy bottoms that they burrow into for winter hibernation.

Northern Map Turtle (*Graptemys geographica*) is listed as “Special Concern” by SARO, and is not protected under the ESA. This species inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female’s mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.

Snapping Turtle (*Chelydra serpentina*) is listed as “Special Concern” by SARO and is not protected under the ESA. Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often

take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dam and aggregate pits.

Appendix D

OBBA Database and Species Descriptions



Square Summary (17TQK11)

#species				#hours		#pc done		
poss	prob	conf	total	total	peak	road	offrd	
2	1	1	4	4.5	0	0	0	

Region summary (#16: Peterborough, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
60	2	188	0	0

Target number of point counts in this square: 25 in total: 25 road side, 0 off road.

SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%
Canada Goose	AE		0	American Coot ‡			0	Northern Saw-whet Owl			0
Mute Swan ‡			0	Sandhill Crane ‡			0	Belted Kingfisher	CF		0
Trumpeter Swan			0	Killdeer §	NE		0	Yellow-bellied Sapsucker	NY		0
Wood Duck	FY		0	Upland Sandpiper †	S		0	Red-headed Woodpecker †			0
Blue-winged Teal ‡	FY		0	American Woodcock	S		0	<u>Red-bellied Woodpecker</u>			100
Northern Shoveler ‡			0	Wilson's Snipe	FY		0	Black-backed Woodpecker ‡			0
Gadwall ‡			0	Spotted Sandpiper	T		0	<u>Downy Woodpecker</u>	FY		50
American Wigeon ‡			0	Ring-billed Gull § ‡			0	<u>Hairy Woodpecker</u>	FY		100
<u>Mallard</u>	FY		50	Herring Gull §			0	<u>Pileated Woodpecker</u>	N		100
<u>American Black Duck</u>			50	Caspian Tern ‡			0	Northern Flicker	T		0
Northern Pintail ‡			0	Black Tern †	NE		0	American Kestrel §	P		0
Green-winged Teal ‡	P		0	Common Tern § ‡			0	Merlin	FY		0
Redhead †			0	Common Loon	P		0	Peregrine Falcon ‡			0
Ring-necked Duck			0	Double-crested Cormorant § ‡			0	Olive-sided Flycatcher ‡			0
Lesser Scaup ‡			0	American Bittern	S		0	Eastern Wood-Pewee §	FY		0
Hooded Merganser			0	Least Bittern †	NY		0	Yellow-bellied Flycatcher ‡			0
Common Merganser ‡	P		0	Great Blue Heron §			0	Alder Flycatcher	FY		0
Ruddy Duck ‡			0	Green Heron §	T		0	Willow Flycatcher	T		0
Ring-necked Pheasant ‡			0	Turkey Vulture	FY		0	Least Flycatcher	NE		0
<u>Ruffed Grouse</u>	FY		50	Osprey	NY		0	Eastern Phoebe	FY		0
Wild Turkey	H		0	Northern Harrier	T		0	Great Crested Flycatcher	CF		0
Pied-billed Grebe	T		0	Sharp-shinned Hawk	H		0	Eastern Kingbird	CF		0
Rock Pigeon (Feral Pigeon)	AE		100	<u>Cooper's Hawk</u>	AE		50	Yellow-throated Vireo			0
<u>Mourning Dove</u>	FY		100	Northern Goshawk ‡			0	Blue-headed Vireo	T		0
Yellow-billed Cuckoo			0	Bald Eagle ‡			0	Philadelphia Vireo ‡			0
Black-billed Cuckoo	CF		0	Red-shouldered Hawk			0	Warbling Vireo	T		0
Common Nighthawk §			0	Broad-winged Hawk			0	Red-eyed Vireo	T		0
Eastern Whip-poor-will §			0	<u>Red-tailed Hawk</u>	NY		100	Loggerhead Shrike †			0
Chimney Swift ‡			0	Eastern Screech-Owl		H	100	Canada Jay ‡			0
Ruby-throated Hummingbird	D		0	Great Horned Owl ‡	NY	S	100	<u>Blue Jay</u>	NY		150
Virginia Rail	NE		0	<u>Barred Owl</u>			100	<u>American Crow</u>	NY		100
Sora	NY		0	Long-eared Owl ‡			0	Common Raven		CF	100
Common Gallinule ‡	NE		0	Short-eared Owl †			0	<u>Black-capped Chickadee</u>	FY		150

Breeding Bird Atlas - Summary Sheet for Square 17TQK11 (page 2 of 2)

SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%
Boreal Chickadee ‡			0	Purple Finch	S		0	Nashville Warbler	S		0
Horned Lark ‡	S		0	Common Redpoll ‡			0	Mourning Warbler	S		0
Northern Rough-winged Swallow	AE		0	Red Crossbill ‡			0	Common Yellowthroat	CF		0
Purple Martin ‡	S		0	White-winged Crossbill ‡			0	Hooded Warbler ‡			0
Tree Swallow	AE		0	Pine Siskin ‡	H		0	American Redstart	T		0
Bank Swallow §	H		0	<u>American Goldfinch</u>	CF		150	Cape May Warbler ‡			0
Barn Swallow §	FY		0	Snow Bunting †			0	Cerulean Warbler †			0
Cliff Swallow §	CF		0	Grasshopper Sparrow §	S		0	Northern Parula ‡			0
Golden-crowned Kinglet			0	Chipping Sparrow	FY		0	Magnolia Warbler			0
Ruby-crowned Kinglet ‡			0	Clay-colored Sparrow ‡			0	Bay-breasted Warbler ‡			0
<u>Red-breasted Nuthatch</u>	T		100	Field Sparrow §	FY		0	Blackburnian Warbler	S		0
<u>White-breasted Nuthatch</u>	T		150	American Tree Sparrow ‡			0	Yellow Warbler	NY		0
<u>Brown Creeper</u>	T		50	<u>Dark-eyed Junco ‡</u>			100	Chestnut-sided Warbler	FY		0
Blue-gray Gnatcatcher ‡			0	White-throated Sparrow	T		0	Black-throated Blue Warbler			0
House Wren	CF		0	Vesper Sparrow	T		0	Pine Warbler	A		0
Winter Wren	S		0	Savannah Sparrow	T		0	Yellow-rumped Warbler	T		0
Sedge Wren ‡	S		0	Song Sparrow	CF		0	Prairie Warbler †			0
Marsh Wren	NY		0	Lincoln's Sparrow ‡			0	Black-throated Green Warbler	T		0
Carolina Wren ‡	T		0	Swamp Sparrow	NY		0	Canada Warbler §	S		0
<u>European Starling</u>	CF		50	Eastern Towhee §			0	Scarlet Tanager	S		0
Gray Catbird	CF		0	Bobolink §	T		0	Northern Cardinal	NY	D	100
Brown Thrasher	FS		0	Eastern Meadowlark §	T		0	Rose-breasted Grosbeak	CF		0
Northern Mockingbird ‡			0	Orchard Oriole ‡			0	Indigo Bunting	P		0
Eastern Bluebird	N		0	Baltimore Oriole	FY		0				
Veery	T		0	Red-winged Blackbird	NY		0				
Swainson's Thrush			0	Brown-headed Cowbird	FY		0				
Hermit Thrush			0	Common Grackle	NY		0				
Wood Thrush §	T		0	Ovenbird	NY		0				
<u>American Robin</u>	NY		50	Northern Waterthrush	T		0				
Cedar Waxwing	NE		0	Golden-winged Warbler †			0				
House Sparrow	AE		0	Blue-winged Warbler ‡			0				
<u>Evening Grosbeak ‡</u>			50	Black-and-white Warbler	FY		0				
House Finch	T		0	Tennessee Warbler ‡			0				

This list includes all breeding species expected in the region #16 (Peterborough). Underlined species are those that you should try to add to this square (17TQK11). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TQK11 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQK11 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #16). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), † (provincially rare). Current as of 19/02/2021. An up-to-date version of this sheet is available from <http://www.birdscanada.org/birdmon/atlas/summaryform.jsp?squareID=17TQK11&lang=EN>



BIRDS CANADA
OISEAUX CANADA

Square Summary (17TQK12)

#species				#hours		#pc done		
poss	prob	conf	total	total	peak	road	offrd	
0	0	0	0	0	0	0	0	0

Region summary (#16: Peterborough, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
60	2	185	0	0

Target number of point counts in this square: 25 in total: 25 road side, 0 off road.

SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%
Canada Goose	FY		0	Common Gallinule ‡	FY		0	Long-eared Owl ‡			0
Mute Swan ‡	AE		0	American Coot ‡	H		0	Short-eared Owl †			0
Trumpeter Swan			0	Sandhill Crane ‡	FY		0	Northern Saw-whet Owl			0
Wood Duck	FY		0	Killdeer §	NE		0	Belted Kingfisher	CF		0
Blue-winged Teal ‡	FY		0	Upland Sandpiper †			0	Yellow-bellied Sapsucker	D		0
Northern Shoveler ‡	FY		0	American Woodcock	NE		0	Red-headed Woodpecker †			0
Gadwall ‡	FY		0	Wilson's Snipe	H		0	Red-bellied Woodpecker			100
American Wigeon ‡			0	Wilson's Phalarope ‡	H		0	Black-backed Woodpecker ‡			0
<u>Mallard</u>	FY		50	Spotted Sandpiper	T		0	<u>Downy Woodpecker</u>	NY		50
<u>American Black Duck</u>			50	Ring-billed Gull § ‡			0	<u>Hairy Woodpecker</u>	NY		100
Northern Pintail ‡			0	Herring Gull §			0	<u>Pileated Woodpecker</u>	S		100
Green-winged Teal ‡			0	Caspian Tern ‡			0	Northern Flicker	FY		0
Redhead †			0	Black Tern †			0	American Kestrel §	NY		0
Ring-necked Duck	P		0	Common Tern § ‡			0	Merlin	D		0
Lesser Scaup ‡			0	Common Loon	T		0	Peregrine Falcon ‡			0
Hooded Merganser	FY		0	Double-crested Cormorant § ‡			0	Olive-sided Flycatcher ‡			0
Common Merganser ‡	A		0	American Bittern	T		0	Eastern Wood-Pewee §	FY		0
Ruddy Duck ‡			0	Least Bittern †	T		0	Yellow-bellied Flycatcher ‡			0
Ring-necked Pheasant ‡			0	Great Blue Heron §			0	Alder Flycatcher	T		0
<u>Ruffed Grouse</u>	FY		50	Green Heron §	FY		0	Willow Flycatcher	S		0
Wild Turkey	NE		0	Turkey Vulture	NY		0	Least Flycatcher	S		0
Pied-billed Grebe			0	Osprey	AE		0	Eastern Phoebe	NY		0
Rock Pigeon (Feral Pigeon)	AE		100	Northern Harrier	P		0	Great Crested Flycatcher	FY		0
<u>Mourning Dove</u>	NE		100	Sharp-shinned Hawk	CF		0	Eastern Kingbird	CF		0
Yellow-billed Cuckoo			0	<u>Cooper's Hawk</u>	N		50	Yellow-throated Vireo			0
Black-billed Cuckoo	P		0	Northern Goshawk ‡			0	Blue-headed Vireo	S		0
Coccyzus sp. ‡	T		0	Bald Eagle ‡	NY		0	Philadelphia Vireo ‡			0
Common Nighthawk §	P		0	Red-shouldered Hawk	H		0	Warbling Vireo	A		0
Eastern Whip-poor-will §	S		0	Broad-winged Hawk	P		0	Red-eyed Vireo	N		0
Chimney Swift ‡	T		0	<u>Red-tailed Hawk</u>	V		100	Loggerhead Shrike †			0
Ruby-throated Hummingbird	T		0	<u>Eastern Screech-Owl</u>	S		100	Canada Jay ‡			0
Virginia Rail	S		0	<u>Great Horned Owl</u> ‡	P		100	<u>Blue Jay</u>	T		150
Sora	FY		0	<u>Barred Owl</u>			100	<u>American Crow</u>	FY		100

Breeding Bird Atlas - Summary Sheet for Square 17TQK12 (page 2 of 2)

SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%	SPECIES	Prev.	Code	%
Common Raven			100	<u>Evening Grosbeak</u> ‡			50	Nashville Warbler	T		0
<u>Black-capped Chickadee</u>	NY		150	House Finch	FY		0	Mourning Warbler	S		0
Boreal Chickadee ‡			0	Purple Finch	P		0	Common Yellowthroat	NY		0
Horned Lark ‡	P		0	Red Crossbill ‡			0	Hooded Warbler ‡			0
Northern Rough-winged Swallow	H		0	White-winged Crossbill ‡			0	American Redstart	N		0
Purple Martin ‡			0	Pine Siskin ‡			0	Cape May Warbler ‡			0
Tree Swallow	NY		0	<u>American Goldfinch</u>	FY		150	Cerulean Warbler †	S		0
Bank Swallow §	AE		0	Grasshopper Sparrow §	N		0	Northern Parula ‡			0
Barn Swallow §	NY		0	Chipping Sparrow	NY		0	Magnolia Warbler			0
Cliff Swallow §	FY		0	Clay-colored Sparrow ‡	T		0	Bay-breasted Warbler ‡			0
Golden-crowned Kinglet			0	Field Sparrow §	S		0	Blackburnian Warbler			0
Ruby-crowned Kinglet ‡			0	<u>Dark-eyed Junco</u> ‡			100	Yellow Warbler	FY		0
<u>Red-breasted Nuthatch</u>	FY		100	White-throated Sparrow	S		0	Chestnut-sided Warbler	S		0
<u>White-breasted Nuthatch</u>	T		150	Vesper Sparrow	T		0	Black-throated Blue Warbler			0
<u>Brown Creeper</u>	S		50	Savannah Sparrow	NE		0	Pine Warbler	S		0
Blue-gray Gnatcatcher ‡			0	Song Sparrow	NE		0	Yellow-rumped Warbler	S		0
House Wren	NY		0	Lincoln's Sparrow ‡			0	Prairie Warbler †			0
Winter Wren	S		0	Swamp Sparrow	FY		0	Black-throated Green Warbler	S		0
Sedge Wren ‡			0	Eastern Towhee §			0	Canada Warbler §	S		0
Marsh Wren	A		0	Bobolink §	CF		0	Scarlet Tanager			0
Carolina Wren ‡			0	Eastern Meadowlark §	FY		0	<u>Northern Cardinal</u>	T		100
<u>European Starling</u>	NY		50	Orchard Oriole ‡			0	Rose-breasted Grosbeak	NE		0
Gray Catbird	T		0	Baltimore Oriole	NY		0	Indigo Bunting	S		0
Brown Thrasher	NE		0	Red-winged Blackbird	NY		0				
Northern Mockingbird ‡			0	Brown-headed Cowbird	NE		0				
Eastern Bluebird	N		0	Common Grackle	NY		0				
Veery	NY		0	Ovenbird	NY		0				
Swainson's Thrush			0	Northern Waterthrush	CF		0				
Hermit Thrush			0	Golden-winged Warbler †			0				
Wood Thrush §	NY		0	Blue-winged Warbler ‡			0				
<u>American Robin</u>	NY		50	Golden-winged/Blue-winged Warbler ‡	S		0				
Cedar Waxwing	FY		0	Black-and-white Warbler	A		0				
House Sparrow	AE		0	Tennessee Warbler ‡			0				

This list includes all breeding species expected in the region #16 (Peterborough). Underlined species are those that you should try to add to this square (17TQK12). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TQK12 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQK12 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #16). Rare/Colonial Species Report Forms should be completed for species marked: § (Colonial), ‡ (regionally rare), † (provincially rare). Current as of 19/02/2021. An up-to-date version of this sheet is available from <http://www.birdscanada.org/birdmon/atlas/summaryform.jsp?squareID=17TQK12&lang=EN>

Bald Eagle (*Haliaeetus leucocephalus*) is listed as “Special Concern” by *Species at Risk Ontario* (SARO), and is not protected under the *Endangered Species Act* (ESA). The species has to be nesting below the boundary delineated within northern Ontario to be included in this group. The Bald Eagle prefers mature forests on the edge of waterways which includes large swamps and lake or river systems. Its main diet consists of fish and carcasses. The species tends to nest within lakeside pine trees as the dense needles tend to conceal their large stick nest from other predator species. There are several known nesting sites within the Trent-Severn Waterway and Kawartha Lakes system.

Bank Swallow (*Riparia riparia*) is listed as “Threatened” by SARO and is protected under the ESA. This avian species nests in burrows into the banks of silt and sand deposits. Nests tend to be found on the shorelines of rivers and lakes. The Bank Swallow may also inhabit sand and gravel pits. Typically, this species forages on insects in flight, but will also glean insects off the water.

Barn Swallow (*Hirundo rustica*) is listed as “Threatened” by SARO and is protected under the ESA. The Barn Swallow inhabits open-rural and urban sites where buildings are situated near watercourses. Nesting is typically sporadic within loose colonies on building structures, bridges and other suitable overhanging structures. The cup-like mud nest is adhered to areas beneath the roof of the structure to conceal the nest from predators and keep it dry. The Barn Swallow feeds on insects by catching them on the wing.

Black Tern (*Chlidonias niger*) is listed as “Special Concern” by SARO, and is not protected under the ESA. The Black Tern prefers shallow, freshwater cattail marshes, wetlands, lake edges and sewage ponds with emergent vegetation. Nesting occurs on dead plant material piled upon aquatic floating vegetation. The Black Tern hunts small insects and minnows along the surface of lakes and ponds.

Bobolink (*Dolichonyx oryzivorus*) is listed as “Threatened” by SARO and is protected under the ESA. The Bobolink prefers large tracts of tallgrass areas, either true prairies or hay fields, as it forages low to the ground in search of larvae and seeds.

Canada Warbler (*Cardellina canadensis*) is listed as “Special Concern” by SARO, and is not protected under the ESA. It prefers large tracts of mixed forests on bottomlands within wetlands or drainage courses. The species nests within the upper extremities of the canopy in deciduous and coniferous trees. The Canada Warbler feeds on beetles, caterpillars and common insects. Typically, this species prefers creeks and mixed forests with a coniferous edge along a moving creek, tributary or river system.

Cerulean Warbler (*Setophaga cerulea*) is listed as “Threatened” by SARO and is

protected under the ESA. They spend their summers (breeding seasons) in mature, deciduous forests with large, tall trees and an open under storey. In late summer, they begin their long migration to wintering grounds in the Andes Mountains in South America. The Cerulean Warbler feeds mainly on insects during the breeding season and on nectar during the non-breeding season. Young birds are fed primarily butterfly larvae. The Cerulean Warbler feeds mainly on insects during the breeding season and on nectar during the non-breeding season.

Chimney Swift (*Chaetura pelagica*) is listed as “Threatened” by SARO and is protected under the ESA. The Chimney Swift is a somewhat generalist species. It will utilize empty cavity nests found in dead trees within fencerows or may utilize unused chimneys as suggested by its common name. This species is most active in early morning and early evening (i.e., dawn and dusk). It will venture outside of the nesting area and feast on insects during those times. It then flies back to the nesting site, entering the nest one after another in an orderly funnel-shaped sequence.

Common Nighthawk (*Chordeiles minor*) is listed as “Special Concern” by SARO, and is not protected under the ESA. The Common Nighthawk is part of the Nightjar family which prefers forest openings, bogs and sometimes open field/meadow areas. Nesting is on bare ground where both adults feed the young. Feeding can take place during day or night, while the species constantly forages for all types of insects.

Eastern Meadowlark (*Sturnella magna*) is listed as “Threatened” by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Eastern Whip-poor-will (*Anthrostomus vociferus*) is listed as “Threatened” by SARO and is protected under the ESA. The Whip-poor-will prefers a combination of large natural tracts of secondary succession forest, watercourses and edge habitat consisting of meadow areas, with open deciduous and pine woodlands. The Whip-poor-will does not construct a nest, but rather uses the soft leaf litter on the ground to form a nest and lay the eggs directly on the ground. The Whip-poor-will is a nighttime hunter, calling its own name while searching for large flying insects, beetles, moths, mosquitos and sometimes grasshoppers. The Whip-poor-will often choose pine species adjacent to waterways to call from.

Eastern Wood-Pewee (*Contopus virens*) is listed as “Special Concern” by SARO and is not protected under the ESA. This species prefers mixed deciduous and coniferous woodlands which are open or considered edge habitat. Nesting occurs on a tree branch as the species catches insects from a perch.

Grasshopper Sparrow (*Ammodramus savannarum*) is listed as “Special Concern” by SARO and is not protected under the ESA. The Grasshopper Sparrow prefers large (greater than 5 ha) grassland habitats where it breeds. Grassland habitats include pastures, hayfields, natural prairies, alvars. Nests are typically hidden within the grassland and its preferred diet in the summer is large insects (i.e., Grasshoppers).

Least Bittern (*Ixobrychus exilis*) is listed as "Threatened" by SARO and is protected under the ESA. The Least Bittern inhabits freshwater marshes where tall, impenetrable stands of emergent vegetation are utilized for coverage. The Least Bittern may build up a hunting platform in search of small fish, insects, and amphibians.

Wood Thrush (*Hylocichia mustelina*) is listed as “Special Concern” by SARO and is protected under the ESA. The Wood Thrush enjoys relatively undisturbed, mature woodlands. Nesting occurs low in the fork of a tree as this species forages for berries and insects at ground level. Similar to the Eastern Wood-pewee, this species prefers large tracts of woodland.

Appendix E

eBird Database

 [Change location](#) ▾

 [Year-round, All years](#) ▾

Otonabee River-- between Lock 24 and 25

 [**Map**](/hotspots?hs=L1862778&yr=all&m=))(/hotspots?hs=L1862778&yr=all&m=).

 [**Directions**](https://www.google.com/maps/search/?api=1&query=44.3948515,-78.2648636)(https://www.google.com/maps/search/?api=1&query=44.3948515,-78.2648636).

[Peterborough County](#) ,
(/region/CA-ON-PB?
yr=all&m=).

[Ontario](#) (/region/CA-
ON?yr=all&m=).
[CA](#) (/region/CA?
yr=all&m=).

▸ [Hotspot navigation](#)

[Overview](/hotspot/L1862778?yr=all&m=))(/hotspot/L1862778?yr=all&m=).

[Illustrated Checklist](/hotspot/L1862778/media?yr=all&m=))(/hotspot/L1862778/media?yr=all&m=).

VIEW MY...

[My eBird](/myebird/L1862778))(/myebird/L1862778).

[Life List](/MyEBird?cmd=lifeList&time=life&listType=L1862778))(/MyEBird?cmd=lifeList&time=life&listType=L1862778).

[Target Species](/targets?r1=L1862778&bmo=1&emo=12))(/targets?r1=L1862778&bmo=1&emo=12).

[Checklists](/mychecklists/L1862778))(/mychecklists/L1862778).

EXPLORE...

[Hotspot Map](/hotspots?hs=L1862778&yr=all&m=))(/hotspots?hs=L1862778&yr=all&m=).

[Bar Charts](/barchart?r=L1862778&yr=all&m=))(/barchart?r=L1862778&yr=all&m=).

[Media](https://ebird.org/media/catalog?regionCode=L1862778))(https://ebird.org/media/catalog?regionCode=L1862778).

[Printable Checklist](/printableList?regionCode=L1862778&yr=all&m=))(/printableList?regionCode=L1862778&yr=all&m=).

 **106**

[Species observed](#)

(/hotspot/L1862778?yr=all&m=).

 **471**

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Sightings

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[First seen](/hotspot/L1862778?yr=all&m=&rank=lrec))(/hotspot/L1862778?yr=all&m=&rank=lrec).

[High counts](/hotspot/L1862778?yr=all&m=&rank=hc))(/hotspot/L1862778?yr=all&m=&rank=hc).

SPECIES NAME (/HOTSPOT/L1862778?YR=ALL&M=&RANK=MREC&HS_SORTBY=TAXON_ORDER&HS_O=ASC)
COUNT (/HOTSPOT/L1862778? DATE (/HOTSPOT/L1862778? OBSERVER
YR=ALL&M=&RANK=MREC&HS_SORTBY=TAXON_ORDER&HS_O=ASC)

1. **Mallard(/species/mallar/L1862778).**

14 17 Feb 2021 (/checklist/S81830324) C Douglas

2. **Common Goldeneye(/species/comgol/L1862778).**

3 17 Feb 2021 (/checklist/S81830324) C Douglas

3. **Common Merganser(/species/commer/L1862778).**

2 17 Feb 2021 (/checklist/S81830324) C Douglas

4. **Black-capped Chickadee(/species/bkcchi/L1862778).**

2 17 Feb 2021 (/checklist/S81830324) C Douglas

5. **Dark-eyed Junco(/species/daejun/L1862778).**

1 17 Feb 2021 (/checklist/S81830324) C Douglas

6. **Canada Goose(/species/cangoo/L1862778).**

35 11 Feb 2021 (/checklist/S80822456) Hannah Dodington

7. **Red-tailed Hawk(/species/rethaw/L1862778).**

1 11 Feb 2021 (/checklist/S80822456) Hannah Dodington

8. **Trumpeter Swan(/species/truswa/L1862778).**

6 25 Jan 2021 (/checklist/S79871909) Matthew Garvin

9. **Tundra Swan(/species/tunswa/L1862778).**

1 25 Jan 2021 (/checklist/S79871909) Matthew Garvin

10. **American Crow(/species/amecro/L1862778).**

7 25 Jan 2021 (/checklist/S79871909) Matthew Garvin

11. **Herring Gull(/species/hergul/L1862778).**

4 21 Jan 2021 (/checklist/S79687100) Marilyn Hubley

12. **Bald Eagle(/species/baleag/L1862778).**

1 21 Jan 2021 (/checklist/S79687100) Marilyn Hubley

13. **Wild Turkey(/species/wiltur/L1862778).**

12 12 Jan 2021 (/checklist/S79190906) Anonymous eBirder

14. **American Black Duck(/species/ambduc/L1862778).**

1 9 Jan 2021 (/checklist/S78948737) Iain Rayner

15. **Rock Pigeon(/species/rocpig/L1862778).**

1 3 Jan 2021 (/checklist/S78600677) Iain Rayner

16. **House Sparrow(/species/houspa/L1862778).**

2 3 Jan 2021 (/checklist/S78600677) Iain Rayner

	 2 Jan 2021 (/checklist/S78000077)	 Iain Rayner
17. <u>Common Redpoll(/species/comred/L1862778)</u>		
# 120	 1 Jan 2021 (/checklist/S78406929)	 Luke Berg
18. <u>Common Raven(/species/comrav/L1862778)</u>		
# 1	 20 Dec 2020 (/checklist/S77752655)	 Chris Boccia
19. <u>American Tree Sparrow(/species/amtspa/L1862778)</u>		
# 8	 20 Dec 2020 (/checklist/S77752655)	 Chris Boccia
20. <u>White-breasted Nuthatch(/species/whbnut/L1862778)</u>		
# 1	 17 Dec 2020 (/checklist/S77715391)	 Hannah Dodington
21. <u>Cooper's Hawk(/species/coohaw/L1862778)</u>		
# 1	 6 Dec 2020 (/checklist/S77159902)	 Iain Rayner
22. <u>Ring-billed Gull(/species/ribgul/L1862778)</u>		
# 2	 28 Nov 2020 (/checklist/S76808582)	 Henrique Pacheco
23. <u>European Starling(/species/eursta/L1862778)</u>		
# 2	 25 Nov 2020 (/checklist/S76696076)	 Travis Cameron
24. <u>Bufflehead(/species/buffle/L1862778)</u>		
# 1	 26 Oct 2020 (/checklist/S75430149)	 Gill Holmes
25. <u>Great Blue Heron(/species/grbher3/L1862778)</u>		
# 1	 26 Oct 2020 (/checklist/S75430149)	 Gill Holmes
26. <u>Double-crested Cormorant(/species/doccor/L1862778)</u>		
# 1	 17 Oct 2020 (/checklist/S74951167)	 Lynne Cotton
27. <u>Hooded Merganser(/species/hoomer/L1862778)</u>		
# 1	 6 Sep 2020 (/checklist/S78154742)	 Tessa M.
28. <u>Osprey(/species/osprey/L1862778)</u>		
# 1	 6 Sep 2020 (/checklist/S78154742)	 Tessa M.
29. <u>Sandhill Crane(/species/sancra/L1862778)</u>		
# 8	 5 Sep 2020 (/checklist/S73211208)	 Kathryn Sheridan
30. <u>Merlin(/species/merlin/L1862778)</u>		
# 1	 19 Aug 2020 (/checklist/S72574029)	 Sarah Bonnett
31. <u>Eastern Kingbird(/species/easkin/L1862778)</u>		
# 3	 11 Aug 2020 (/checklist/S72313852)	 Carling Dewar
32. <u>Barn Swallow(/species/barswa/L1862778)</u>		
# 1	 11 Aug 2020 (/checklist/S72313852)	 Carling Dewar
33. <u>House Wren(/species/houwre/L1862778)</u>		
# 2	 11 Aug 2020 (/checklist/S72313852)	 Carling Dewar

34.	<u>American Robin(/species/amerob/L1862778).</u>		
# 4	 11 Aug 2020 (/checklist/S72313852).	 Carling Dewar	
35.	<u>Cedar Waxwing(/species/cedwax/L1862778).</u>		
# 1	 11 Aug 2020 (/checklist/S72313852).	 Carling Dewar	
36.	<u>American Goldfinch(/species/amegfi/L1862778).</u>		
# X	 11 Aug 2020 (/checklist/S72313852).	 Carling Dewar	
37.	<u>Red-winged Blackbird(/species/rewbla/L1862778).</u>		
# 4	 11 Aug 2020 (/checklist/S72313852).	 Carling Dewar	
38.	<u>American Redstart(/species/amered/L1862778).</u>		
# 2	 11 Aug 2020 (/checklist/S72313852).	 Carling Dewar	
39.	<u>Mourning Dove(/species/moudov/L1862778).</u>		
# 3	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
40.	<u>Killdeer(/species/killde/L1862778).</u>		
# 3	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
41.	<u>Common Loon(/species/comloo/L1862778).</u>		
# 1	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
42.	<u>Turkey Vulture(/species/turvul/L1862778).</u>		
# 3	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
43.	<u>Warbling Vireo(/species/warvir/L1862778).</u>		
# 1	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
44.	<u>Song Sparrow(/species/sonspa/L1862778).</u>		
# 1	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
45.	<u>Eastern Meadowlark(/species/easmea/L1862778).</u>		
# 1	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
46.	<u>Common Grackle(/species/comgra/L1862778).</u>		
# 3	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
47.	<u>Yellow Warbler(/species/yelwar/L1862778).</u>		
# 1	 8 Jun 2020 (/checklist/S70217432).	 Connor Thompson	
48.	<u>Blue Jay(/species/blujay/L1862778).</u>		
# 3	 1 May 2020 (/checklist/S68196477).	 Brendan Boyd	
49.	<u>Broad-winged Hawk(/species/brwhaw/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073).	 Travis Cameron	
50.	<u>Belted Kingfisher(/species/belkin1/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073).	 Travis Cameron	

51.	<u>Downy Woodpecker(/species/dowwoo/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
52.	<u>Eastern Phoebe(/species/easpho/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
53.	<u>Tree Swallow(/species/treswa/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
54.	<u>Ruby-crowned Kinglet(/species/ruckin/L1862778).</u>		
# 2	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
55.	<u>Swamp Sparrow(/species/swaspa/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
56.	<u>Brown-headed Cowbird(/species/bnhcow/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
57.	<u>Pine Warbler(/species/pinwar/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
58.	<u>Yellow-rumped Warbler(/species/yerwar/L1862778).</u>		
# 1	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
59.	<u>Northern Cardinal(/species/norcar/L1862778).</u>		
# 2	 1 May 2020 (/checklist/S68193073)	 Travis Cameron	
60.	<u>Yellow-bellied Sapsucker(/species/yebsap/L1862778).</u>		
# 1	 27 Apr 2020 (/checklist/S67911563)	 Matthew Garvin	
61.	<u>Golden-crowned Kinglet(/species/gockin/L1862778).</u>		
# 1	 27 Apr 2020 (/checklist/S67911563)	 Matthew Garvin	
62.	<u>Northern Waterthrush(/species/norwat/L1862778).</u>		
# 1	 27 Apr 2020 (/checklist/S67911563)	 Matthew Garvin	
63.	<u>Wilson's Snipe(/species/wilsni1/L1862778).</u>		
# 1	 13 Apr 2020 (/checklist/S67142212)	 Donald A. Sutherland	
64.	<u>Savannah Sparrow(/species/savspa/L1862778).</u>		
# 1	 13 Apr 2020 (/checklist/S67142212)	 Donald A. Sutherland	
65.	<u>Pied-billed Grebe(/species/pibgre/L1862778).</u>		
# 1	 8 Apr 2020 (/checklist/S66833602)	 Martin Parker	
66.	<u>Northern Shrike(/species/norshr4/L1862778).</u>		
# 1	 9 Jan 2020 (/checklist/S63209407)	 Luke Berg	
67.	<u>Pileated Woodpecker(/species/pilwoo/L1862778).</u>		
# 2	 21 May 2019 (/checklist/S56637161)	 Joe Dzedzina	

68.	<u>Chipping Sparrow(/species/chispa/L1862778).</u>		
# 1	 17 May 2019 (/checklist/S56396292).	 Andrew Brown	
69.	<u>Brown Thrasher(/species/brnthr/L1862778).</u>		
# 3	 3 May 2019 (/checklist/S55720502).	 Derek Neumann and/or Michael Schmidt	
70.	<u>White-throated Sparrow(/species/whtspa/L1862778).</u>		
# 6	 3 May 2019 (/checklist/S55720502).	 Derek Neumann and/or Michael Schmidt	
71.	<u>Nashville Warbler(/species/naswar/L1862778).</u>		
# 1	 3 May 2019 (/checklist/S55720502).	 Derek Neumann and/or Michael Schmidt	
72.	<u>Black-throated Green Warbler(/species/btnwar/L1862778).</u>		
# 1	 3 May 2019 (/checklist/S55720502).	 Derek Neumann and/or Michael Schmidt	
	gull sp.		
# 1	 21 Apr 2019 (/checklist/S55237810).	 Iain Rayner	
73.	<u>Ring-necked Duck(/species/rinduc/L1862778).</u>		
# 4	 13 Apr 2019 (/checklist/S54899769).	 C Douglas	
74.	<u>Hairy Woodpecker(/species/haiwoo/L1862778).</u>		
# 1	 2 Apr 2019 (/checklist/S54484055).	 C Douglas	
75.	<u>Red-bellied Woodpecker(/species/rebwoo/L1862778).</u>		
# 1	 16 Mar 2019 (/checklist/S53892262).	 Anonymous eBirder	
76.	<u>Long-tailed Duck(/species/lotduc/L1862778).</u>		 
# 2	 9 Mar 2019 (/checklist/S53638142).	 C Douglas	
77.	<u>Red-necked Grebe(/species/rengre/L1862778).</u>		
# 1	 8 Mar 2019 (/checklist/S53607092).	 Ben Taylor	
	Bohemian/Cedar Waxwing		
# 30	 5 Feb 2019 (/checklist/S52408446).	 C Douglas	
78.	<u>Caspian Tern(/species/caster1/L1862778).</u>		
# 2	 25 Aug 2018 (/checklist/S49847132).	 Alain Parada Isada	
79.	<u>Green Heron(/species/grnher/L1862778).</u>		
# 1	 25 Aug 2018 (/checklist/S49847132).	 Alain Parada Isada	
80.	<u>Least Flycatcher(/species/leafly/L1862778).</u>		
# 1	 2 Jun 2018 (/checklist/S46233730).	 Colin Jones	
81.	<u>Red-eyed Vireo(/species/reevir1/L1862778).</u>		
# 4	 2 Jun 2018 (/checklist/S46233730).	 Colin Jones	
82.	<u>Northern Rough-winged Swallow(/species/nrswa/L1862778).</u>		
# 3	 2 Jun 2018 (/checklist/S46233730).	 Colin Jones	

83.	<u>Cliff Swallow(/species/cliswa/L1862778).</u>		
# 3	 19 May 2018 (/checklist/S45827610).	 Mike V.A. Burrell	
84.	<u>Wood Duck(/species/wooduc/L1862778).</u>		
# 13	 6 Apr 2018 (/checklist/S44313258).	 Mike V.A. Burrell	
85.	<u>Bank Swallow(/species/banswa/L1862778).</u>		
# 2	 5 Aug 2017 (/checklist/S38485258).	 Mike V.A. Burrell	
	Larus sp.		
# 1	 8 Feb 2017 (/checklist/S34241416).	 Scott Gibson	
86.	<u>Red-breasted Nuthatch(/species/rebnut/L1862778).</u>		
# 1	 9 Jan 2017 (/checklist/S33568741).	 Chris Cordy	
87.	<u>Northern Flicker(/species/norfli/L1862778).</u>		
# 1	 18 Sep 2016 (/checklist/S31641542).	 Dave Milsom	
88.	<u>Black-throated Blue Warbler(/species/btbwar/L1862778).</u>		
# 1	 18 Sep 2016 (/checklist/S31641542).	 Dave Milsom	
89.	<u>Pine Siskin(/species/pinsis/L1862778).</u>		
# 6	 23 Apr 2016 (/checklist/S29137325).	 Carol Horner	
90.	<u>Greater Scaup(/species/gresca/L1862778).</u>		 
# 1	 7 Mar 2016 (/checklist/S28087204).	 Wendy Hogan	
91.	<u>Cackling Goose(/species/cacgoo1/L1862778).</u>		
# 1	 18 Nov 2015 (/checklist/S38112009).	 John Bick	
92.	<u>American Kestrel(/species/amekes/L1862778).</u>		
# 1	 21 Sep 2015 (/checklist/S25121215).	 Bill Crins	
93.	<u>Great Crested Flycatcher(/species/grcfly/L1862778).</u>		
# 1	 8 Jun 2015 (/checklist/S23876519).	 Travis Cameron	
94.	<u>Common Yellowthroat(/species/comyel/L1862778).</u>		
# 1	 8 Jun 2015 (/checklist/S23876519).	 Travis Cameron	
95.	<u>Chestnut-sided Warbler(/species/chswar/L1862778).</u>		
# 1	 8 Jun 2015 (/checklist/S23876519).	 Travis Cameron	
96.	<u>Baltimore Oriole(/species/balori/L1862778).</u>		
# 1	 24 May 2015 (/checklist/S23631973).	 Donald A. Sutherland	
97.	<u>Blackpoll Warbler(/species/bkpwar/L1862778).</u>		
# 1	 24 May 2015 (/checklist/S23631973).	 Donald A. Sutherland	
98.	<u>Snow Bunting(/species/snobun/L1862778).</u>		
# 1	 24 Mar 2015 (/checklist/S22505418).	 Matthew Tobey	

99.	<u>Red-breasted Merganser(/species/rebmer/L1862778).</u>	
# 1	 25 Feb 2015 (/checklist/S22094744)	 Anonymous eBirder
100.	<u>Ross's Goose(/species/rosgoo/L1862778).</u>	
# 1	 5 Dec 2014 (/checklist/S38121135)	 John Bick
101.	<u>Ruby-throated Hummingbird(/species/rthhum/L1862778).</u>	
# 1	 10 May 2014 (/checklist/S18321830)	 Tim Haan
102.	<u>Bay-breasted Warbler(/species/babwar/L1862778).</u>	
# 1	 10 May 2014 (/checklist/S18321830)	 Tim Haan
	Common/Red-breasted Merganser	
# 8	 5 Apr 2014 (/checklist/S17755454)	 Mike Stiell
103.	<u>White-winged Scoter(/species/whwsco2/L1862778).</u>	
# 1	 28 Jan 2014 (/checklist/S16551310)	 Len Manning, III
104.	<u>Northern Harrier(/species/norhar2/L1862778).</u>	
# 1	 16 Nov 2013 (/checklist/S15774604)	 Donald A. Sutherland
1)		
1)		

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Recent visits

OBSERVER	DATE	SPECIES
C Douglas	17 Feb 2021 (/checklist/S81830324)	5
Hannah Dodington	11 Feb 2021 (/checklist/S80822456)	4
Rob Stavinga	11 Feb 2021 (/checklist/S80970481)	2
Iain Rayner	9 Feb 2021 (/checklist/S80710307)	1
Hannah Dodington	7 Feb 2021 (/checklist/S80605444)	2
Hannah Dodington	3 Feb 2021 (/checklist/S80391401)	2
Matthew Garvin	25 Jan 2021 (/checklist/S79871909)	8
Jane Kroes	21 Jan 2021 (/checklist/S79854686)	4
Matthew Garvin	21 Jan 2021 (/checklist/S79854686)	4

Checklists submitted within the last hour are not shown.

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Species (/hotspot/L1862778?yr=all&m=&sortBy=spp).		Checklists (/hotspot/L1862778?yr=all&m=&sortBy=cl).	
1	Donald A. Sutherland		51
2	Travis Cameron		48
3	Mike V.A. Burrell	39	
4	Iain Rayner	38	
5	C Douglas	34	
6	Matthew Garvin	33	
6	Bill Crins	33	
8	Martin Parker	32	
9	Colin Jones	26	
10	Ben Taylor	22	

Bald Eagle (*Haliaeetus leucocephalus*) is listed as “Special Concern” by *Species at Risk Ontario* (SARO), and is not protected under the *Endangered Species Act* (ESA). The species has to be nesting below the boundary delineated within northern Ontario to be included in this group. The Bald Eagle prefers mature forests on the edge of waterways which includes large swamps and lake or river systems. Its main diet consists of fish and carcasses. The species tends to nest within lakeside pine trees as the dense needles tend to conceal their large stick nest from other predator species. There are several known nesting sites within the Trent-Severn Waterway and Kawartha Lakes system.

Bank Swallow (*Riparia riparia*) is listed as “Threatened” by SARO and is protected under the ESA. This avian species nests in burrows into the banks of silt and sand deposits. Nests tend to be found on the shorelines of rivers and lakes. The Bank Swallow may also inhabit sand and gravel pits. Typically, this species forages on insects in flight, but will also glean insects off the water.

Barn Swallow (*Hirundo rustica*) is listed as “Threatened” by SARO and is protected under the ESA. The Barn Swallow inhabits open-rural and urban sites where buildings are situated near watercourses. Nesting is typically sporadic within loose colonies on building structures, bridges and other suitable overhanging structures. The cup-like mud nest is adhered to areas beneath the roof of the structure to conceal the nest from predators and keep it dry. The Barn Swallow feeds on insects by catching them on the wing.

Eastern Meadowlark (*Sturnella magna*) is listed as “Threatened” by SARO and is protected under the ESA. The Eastern Meadowlark is similar to Bobolink, as this species also prefers large tracts of agricultural fields or tallgrass prairies to nest within. Eastern Meadowlark is a ground nester, thus requires the tall grass to conceal its nest and eggs. Feeding includes beetles, crickets and spiders.

Appendix F

iNaturalist Records

Birds

Bald Eagle (*Haliaeetus leucocephalus*) is listed as “Special Concern” by *Species at Risk Ontario* (SARO), and is not protected under the *Endangered Species Act* (ESA). The species has to be nesting below the boundary delineated within northern Ontario to be included in this group. The Bald Eagle prefers mature forests on the edge of waterways which includes large swamps and lake or river systems. Its main diet consists of fish and carcasses. The species tends to nest within lakeside pine trees as the dense needles tend to conceal their large stick nest from other predator species. There are several known nesting sites within the Trent-Severn Waterway and Kawartha Lakes system.

Amphibians & Reptiles

Midland Painted Turtle (*Chrysemys picta marginata*) is listed as “Special Concern” by COSEWIC and is currently under review by COSSARO. Midland Painted Turtles spend the majority of their lives in water. They prefer shallow water with aquatic vegetation, soft mud, and leaf litter at the bottom. Typically found basking on logs, rocks, and shorelines in sunlight. Midland Painted Turtles nest between mid-spring and early summer. They tend to choose gravely, sandy and loam soils for nesting.

Northern Map Turtle (*Graptemys geographica*) is listed as “Special Concern” by SARO, and is not protected under the ESA. This species inhabits rivers and lakeshores where it basks on emergent rocks and fallen trees throughout the spring and summer. In winter, the turtles hibernate on the bottom of deep, slow-moving sections of river. They require high-quality water that supports the female's mollusc prey. Their habitat must contain suitable basking sites, such as rocks and deadheads, with an unobstructed view from which a turtle can drop immediately into the water if startled.

Snapping Turtle (*Chelydra serpentina*) is listed as “Special Concern” by SARO and is not protected under the ESA. Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravely or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dam and aggregate pits.

Plants

Black Ash (*Fraxinus nigra*): is listed as “Threatened” by COSEWIC and is currently under review by COSSARO. Black Ash is a shade tolerant species that

prefers moist alkaline soil. Black Ash occurs in and around swamp type environments, areas which have seasonal flooding, and moist upland forests.

Non-SAR Species

Redhead (*Aythya americana*)- is a duck species that has a rusty-brown/red head. It occurs in local waterways such as rivers and lakes and also inhabits sewage lagoons. Redhead is not a species at risk, but is tracked by the NHIC as it is considered rare in North America according to the NatureServe network.

Faint Spotted Palthis Moth (*Palthis asopialis*) - colouration is bark-like so that it is camouflaged by trees. Its food plants include Bidens species, and the leaves of beans, corn, and oaks. Faint Spotted Palthis Moth is not a species at risk, but is tracked by the NHIC as it is considered rare in North America according to the NatureServe network.

Caspian Tern (*Hydroprogne caspia*) - is a gull-like bird that typically nests in cattail marshes associated with large waterways. This species is often observed along the coast of Lake Ontario and the Trent Severn Waterway. Terns typically dive for small fish and crustaceans along the shoreline. Caspian Tern is not a species at risk, but is tracked by the NHIC as it is considered rare in North America according to the NatureServe network.

Ross's Goose (*Chen rossii*) - is a small goose compared to the Canada Goose which everyone is familiar with. Ross's Goose is predominantly white and has black wing tips and tail-feathers. Ross's Goose typically nests in the Hudson Bay Lowlands during the spring and summer months and migrates south during the winter. Ross's Goose is not a species at risk, but is tracked by the NHIC as it is considered rare in North America according to the NatureServe network.

Appendix G

Species List

Species Occurrences

Amphibians

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Wood Frog	Lithobates sylvaticus	S5		
Northern Leopard Frog	Lithobates pipiens	S5	NAR	NAR
Gray Treefrog	Hyla versicolor	S5		

Birds

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Cooper's Hawk	Accipiter cooperii	S4	NAR	NAR
Red-tailed Hawk	Buteo jamaicensis	S5	NAR	NAR
Turkey Vulture	Cathartes aura	S5B		
Canada Goose	Branta canadensis	S5		
Wood Duck	Aix sponsa	S5		
Mallard	Anas platyrhynchos	S5		
Ruby-throated Hummingbird	Archilochus colubris	S5B		
American Woodcock	Scolopax minor	S4B		
Ring-billed Gull	Larus delawarensis	S5B,S4N		
Killdeer	Charadrius vociferus	S5B,S5N		
Mourning Dove	Zenaida macroura	S5		
Belted Kingfisher	Megaceryle alcyon	S4B		
Black-billed Cuckoo	Coccyzus erythrophthalmus	S5B		
American Kestrel	Falco sparverius	S4		
Ruffed Grouse	Bonasa umbellus	S4		
Wild Turkey	Meleagris gallopavo	S5		
Red-winged Blackbird	Agelaius phoeniceus	S4		
Brown Thrasher	Toxostoma rufum	S4B		
Gray Catbird	Dumetella carolinensis	S4B		
Tree Swallow	Tachycineta bicolor	S4B		
Eastern Kingbird	Tyrannus tyrannus	S4B		
Great Crested Flycatcher	Myiarchus crinitus	S4B		
White-crowned Sparrow	Zonotrichia leucophrys	S4B		
Mourning Warbler	Geothlypis philadelphia	S4B		
Savannah Sparrow	Passerculus sandwichensis	S4B		
Field Sparrow	Spizella pusilla	S4B		
Purple Finch	Haemorhous purpureus	S4B		

Veery	<i>Catharus fuscescens</i>	S4B		
Common Redpoll	<i>Acanthis flammea</i>	S4B		
Baltimore Oriole	<i>Icterus galbula</i>	S4B		
Brown-headed Cowbird	<i>Molothrus ater</i>	S4B		
Ovenbird	<i>Seiurus aurocapilla</i>	S4B		
Indigo Bunting	<i>Passerina cyanea</i>	S4B		
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5		
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5		
Red-breasted Nuthatch	<i>Sitta canadensis</i>	S5		
Blue Jay	<i>Cyanocitta cristata</i>	S5		
Yellow-rumped Warbler	<i>Setophaga coronata</i>	S5B		
Black-throated Green Warbler	<i>Setophaga virens</i>	S5B		
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	S5B		
Magnolia Warbler	<i>Setophaga magnolia</i>	S5B		
American Robin	<i>Turdus migratorius</i>	S5B		
Song Sparrow	<i>Melospiza melodia</i>	S5B		
Dark-eyed Junco	<i>Junco hyemalis</i>	S5B		
Common Yellowthroat	<i>Geothlypis trichas</i>	S5B		
Nashville Warbler	<i>Oreothlypis ruficapilla</i>	S5B		
Black-and-white Warbler	<i>Mniotilta varia</i>	S5B		
Northern Waterthrush	<i>Parkesia noveboracensis</i>	S5B		
American Goldfinch	<i>Spinus tristis</i>	S5B		
Eastern Phoebe	<i>Sayornis phoebe</i>	S5B		
Common Grackle	<i>Quiscalus quiscula</i>	S5B		
American Redstart	<i>Setophaga ruticilla</i>	S5B		
House Wren	<i>Troglodytes aedon</i>	S5B		
Eastern Bluebird	<i>Sialia sialis</i>	S5B	NAR	NAR
Warbling Vireo	<i>Vireo gilvus</i>	S5B		
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B		
American Crow	<i>Corvus brachyrhynchos</i>	S5B		
Winter Wren	<i>Troglodytes hiemalis</i>	S5B		
Cedar Waxwing	<i>Bombycilla cedrorum</i>	S5B		
House Sparrow	<i>Passer domesticus</i>	SNA		
European Starling	<i>Sturnus vulgaris</i>	SNA		
Snow Bunting	<i>Plectrophenax nivalis</i>	SNA		
Black-backed Woodpecker	<i>Picoides arcticus</i>	S4		

Northern Flicker	Colaptes auratus	S4B
Hairy Woodpecker	Picoides villosus	S5
Pileated Woodpecker	Dryocopus pileatus	S5
Yellow-bellied Sapsucker	Sphyrapicus varius	S5B

Insects

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
A Bumble Bee	Bombus borealis	S4		
A Bumble Bee	Bombus ternarius	S5		
Indian Skipper	Hesperia sassacus	S4		
Black Swallowtail	Papilio polyxenes	S5		
Viceroy	Limenitis archippus	S5		
Red Admiral	Vanessa atalanta	S5		
Hobomok Skipper	Poanes hobomok	S5		
Common Buckeye	Junonia coenia	SNA		
Black Meadowhawk	Sympetrum danae	S4		
Widow Skimmer	Libellula luctuosa	S5		

Mammals

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
White-tailed Deer	Odocoileus virginianus	S5		
Red Fox	Vulpes vulpes	S5		
Coyote	Canis latrans	S5		
Northern Raccoon	Procyon lotor	S5		
Tricolored Bat	Perimyotis subflavus	S3?	END	END
Big Brown Bat	Eptesicus fuscus	S4		
Silver-haired Bat	Lasionycteris noctivagans	S4		
Hoary Bat	Lasiurus cinereus	S4		
Eastern Cottontail	Sylvilagus floridanus	S5		
Deer Mouse	Peromyscus maniculatus	S5		
Porcupine	Erethizon dorsatum	S5		
Eastern Chipmunk	Tamias striatus	S5		
Red Squirrel	Tamiasciurus hudsonicus	S5		

Reptiles and Turtles

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Eastern Gartersnake	Thamnophis sirtalis sirtalis	S5		
DeKay's Brownsnake	Storeria dekayi	S5	NAR	NAR

Vascular Plants

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	S5		
Wild Carrot	<i>Daucus carota</i>	SNA		
Interior White Aster	<i>Symphyotrichum lanceolatum</i> var. interior	S4S5		
Early Goldenrod	<i>Solidago juncea</i>	S5		
Calico Aster	<i>Symphyotrichum lateriflorum</i> var. lateriflorum	S5		
White Heath Aster	<i>Symphyotrichum ericoides</i> var. ericoides	S5		
New England Aster	<i>Symphyotrichum novae-angliae</i>	S5		
Lindley's Aster	<i>Symphyotrichum ciliolatum</i>	S5		
Gray-stemmed Goldenrod	<i>Solidago nemoralis</i> ssp. nemoralis	S5		
Canada Goldenrod	<i>Solidago canadensis</i> var. canadensis	S5		
Black-eyed Susan	<i>Rudbeckia hirta</i>	S5		
Large-leaved Aster	<i>Eurybia macrophylla</i>	S5		
Daisy Fleabane	<i>Erigeron hyssopifolius</i>	S5		
Canada Horseweed	<i>Erigeron canadensis</i>	S5		
Flat-top White Aster	<i>Doellingeria umbellata</i> var. umbellata	S5		
Pearly Everlasting	<i>Anaphalis margaritacea</i>	S5		
Field Pussytoes	<i>Antennaria neglecta</i>	S5		
Heart-leaved Aster	<i>Symphyotrichum cordifolium</i>	S5		
Perennial Ragweed	<i>Ambrosia psilostachya</i>	SNA		
Common Yarrow	<i>Achillea millefolium</i>	SNA		
Common Burdock	<i>Arctium minus</i>	SNA		
Common Wormwood	<i>Artemisia vulgaris</i>	SNA		
Chicory	<i>Cichorium intybus</i>	SNA		
Canada Thistle	<i>Cirsium arvense</i>	SNA		
Bull Thistle	<i>Cirsium vulgare</i>	SNA		
Elecampane	<i>Inula helenium</i>	SNA		
Oxeye Daisy	<i>Leucanthemum vulgare</i>	SNA		
Meadow Hawkweed	<i>Pilosella caespitosa</i>	SNA		
Common Ragwort	<i>Senecio vulgaris</i>	SNA		
Prickly Sow-thistle	<i>Sonchus asper</i>	SNA		
Common Dandelion	<i>Taraxacum officinale</i>	SNA		
Colt's-foot	<i>Tussilago farfara</i>	SNA		

Rock Draba	<i>Draba arabisans</i>	S4
Creeping Yellowcress	<i>Rorippa sylvestris</i>	SNA
Field Peppergrass	<i>Lepidium campestre</i>	SNA
Garlic Mustard	<i>Alliaria petiolata</i>	SNA
Field Mustard	<i>Brassica rapa</i>	SNA
Russian-pigweed	<i>Axyris amaranthoides</i>	SNA
Bladder Campion	<i>Silene vulgaris</i>	SNA
Bouncing-bet	<i>Saponaria officinalis</i>	SNA
Common Mouse-ear Chickweed	<i>Cerastium fontanum</i>	SNA
White Amaranth	<i>Amaranthus albus</i>	SNA
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	S5
Old Switch Panicgrass	<i>Panicum virgatum</i>	S4
Poverty Oatgrass	<i>Danthonia spicata</i>	S5
Mexican Muhly	<i>Muhlenbergia mexicana</i>	S5
Common Timothy	<i>Phleum pratense</i>	SNA
Hairy Crabgrass	<i>Digitaria sanguinalis</i>	SNA
Hair Fescue	<i>Festuca filiformis</i>	SNA
Orchard Grass	<i>Dactylis glomerata</i>	SNA
Hard Fescue	<i>Festuca trachyphylla</i>	SNA
Redtop	<i>Agrostis gigantea</i>	SNA
Smooth Brome	<i>Bromus inermis</i>	SNA
Meadow Brome	<i>Bromus erectus</i>	SNA
Common Elderberry	<i>Sambucus canadensis</i>	S5
Canada Fly Honeysuckle	<i>Lonicera canadensis</i>	S5
Tartarian Honeysuckle	<i>Lonicera tatarica</i>	SNA
Meadow Horsetail	<i>Equisetum pratense</i>	S5
Showy Tick-trefoil	<i>Desmodium canadense</i>	S4
Trailing Wild Bean	<i>Strophostyles helvola</i>	S4
Tufted Vetch	<i>Vicia cracca</i>	SNA
Alsike Clover	<i>Trifolium hybridum</i>	SNA
Low Hop Clover	<i>Trifolium campestre</i>	SNA
White Sweet-clover	<i>Melilotus albus</i>	SNA
Red Clover	<i>Trifolium pratense</i>	SNA
Paper Birch	<i>Betula papyrifera</i>	S5
Eastern Hop-hornbeam	<i>Ostrya virginiana</i>	S5
Fragile Fern	<i>Cystopteris fragilis</i>	S4

New York Fern	<i>Thelypteris noveboracensis</i>	S4S5
Common Oak Fern	<i>Gymnocarpium dryopteris</i>	S5
Spinulose Wood Fern	<i>Dryopteris carthusiana</i>	S5
Sensitive Fern	<i>Onoclea sensibilis</i>	S5
Bracken Fern	<i>Pteridium aquilinum</i>	S5
Ostrich Fern	<i>Matteuccia struthiopteris</i>	S5
Common Milkweed	<i>Asclepias syriaca</i>	S5
Spreading Dogbane	<i>Apocynum androsaemifolium</i>	S5
European Swallow-wort	<i>Cynanchum rossicum</i>	SNA
Spotted Jewelweed	<i>Impatiens capensis</i>	S5
Herb-Robert	<i>Geranium robertianum</i>	S5
Creeping Wood-sorrel	<i>Oxalis corniculata</i>	SNA
Black Walnut	<i>Juglans nigra</i>	S4?
Path Rush	<i>Juncus tenuis</i>	S5
False Pennyroyal	<i>Trichostema brachiatum</i>	S4
Virginia Mountain-mint	<i>Pycnanthemum virginianum</i>	S4
Self-heal	<i>Prunella vulgaris</i> ssp. <i>lanceolata</i>	S5
Field Basil	<i>Clinopodium vulgare</i>	S5
Common Viper's-bugloss	<i>Echium vulgare</i>	SNA
Ground Ivy	<i>Glechoma hederacea</i>	SNA
Wild Bergamot	<i>Monarda fistulosa</i> var. <i>fistulosa</i>	SU
False Solomon's-seal	<i>Maianthemum racemosum</i>	S5
European Lily-of-the-valley	<i>Convallaria majalis</i>	SNA
Garden Asparagus	<i>Asparagus officinalis</i>	SNA
American Basswood	<i>Tilia americana</i>	S5
Broad-leaved Enchanter's Nightshade	<i>Circaea canadensis</i>	S5
Common Evening Primrose	<i>Oenothera biennis</i>	S5
Purple Loosestrife	<i>Lythrum salicaria</i>	SNA
Balsam Fir	<i>Abies balsamea</i>	S5
Eastern White Cedar	<i>Thuja occidentalis</i>	S5
Eastern White Pine	<i>Pinus strobus</i>	S5
White Spruce	<i>Picea glauca</i>	S5
Norway Spruce	<i>Picea abies</i>	SNA
Scots Pine	<i>Pinus sylvestris</i>	SNA
Rugel's Plantain	<i>Plantago rugelii</i>	S5
English Plantain	<i>Plantago lanceolata</i>	SNA

Curly Dock	<i>Rumex crispus</i>	SNA
Whorled Loosestrife	<i>Lysimachia quadrifolia</i>	S4
Autumn Olive	<i>Elaeagnus umbellata</i>	SNA
Long-fruited Anemone	<i>Anemone cylindrica</i>	S4
Tall Buttercup	<i>Ranunculus acris</i>	SNA
Japanese Barberry	<i>Berberis thunbergii</i>	SNA
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	S4?
Riverbank Grape	<i>Vitis riparia</i>	S5
Common Buckthorn	<i>Rhamnus cathartica</i>	SNA
Sweet Crabapple	<i>Malus coronaria</i>	S4
Spring Avens	<i>Geum vernum</i>	S4
Ditch-stonecrop	<i>Penthorum sedoides</i>	S5
American Mountain-ash	<i>Sorbus americana</i>	S5
Purple-flowering Raspberry	<i>Rubus odoratus</i>	S5
Choke Cherry	<i>Prunus virginiana</i>	S5
Black Cherry	<i>Prunus serotina</i>	S5
Common Silverweed	<i>Potentilla anserina</i> ssp. <i>anserina</i>	S5
Yellow Avens	<i>Geum aleppicum</i>	S5
Norwegian Cinquefoil	<i>Potentilla norvegica</i>	S5
Common Red Raspberry	<i>Rubus idaeus</i> ssp. <i>idaeus</i>	SNA
English Hawthorn	<i>Crataegus monogyna</i>	SNA
Scentless Mock-orange	<i>Philadelphus inodorus</i>	SNA
Wild Strawberry	<i>Fragaria virginiana</i> ssp. <i>virginiana</i>	SU
Cleavers	<i>Galium aparine</i>	S5
Trembling Aspen	<i>Populus tremuloides</i>	S5
Red Maple	<i>Acer rubrum</i>	S5
Sugar Maple	<i>Acer saccharum</i>	S5
Staghorn Sumac	<i>Rhus typhina</i>	S5
Eastern Poison Ivy	<i>Toxicodendron radicans</i> var. <i>radicans</i>	S5
Common Prickly-ash	<i>Zanthoxylum americanum</i>	S5
Norway Maple	<i>Acer platanoides</i>	SNA
White Ash	<i>Fraxinus americana</i>	S4
Black Ash	<i>Fraxinus nigra</i>	S4
Butter-and-eggs	<i>Linaria vulgaris</i>	SNA
Common Mullein	<i>Verbascum thapsus</i>	SNA
Field Speedwell	<i>Veronica agrestis</i>	SNA

Common Lilac	<i>Syringa vulgaris</i>	SNA
Field Bindweed	<i>Convolvulus arvensis</i>	SNA
Common St. John's-wort	<i>Hypericum perforatum</i>	SNA
Rock Elm	<i>Ulmus thomasii</i>	S4
Canada Clearweed	<i>Pilea pumila</i>	S5
American Elm	<i>Ulmus americana</i>	S5
Arrow-leaved Violet	<i>Viola sagittata</i> var. <i>sagittata</i>	S4
Downy Yellow Violet	<i>Viola pubescens</i> var. <i>pubescens</i>	S5
Woolly Blue Violet	<i>Viola sororia</i>	S5

Appendix H

Bat Data Summary

Bat Detection Summary Brief						
Location ID:		BD3		BD4		Occurrence
Common Name	Scientific Name	Detected	Probable	Detected	Probable	% of Identifiable Calls
Eastern Small-Footed Myotis	<i>Myotis leibii</i>	0	0	0	0	0.00%
Northern Long-eared Myotis	<i>Myotis septentrionalis</i>	0	0	0	0	0.00%
Little Brown Myotis (Bat)	<i>Myotis lucifugus</i>	0	0	0	0	0.00%
Tri-coloured Bat	<i>Perimyotis subflavus</i>	0	0	0	2	0.15%
Eastern Red Bat	<i>Lasiurus borealis</i>	0	0	0	1	0.08%
Big Brown Bat	<i>Eptesicus fuscus</i>	0	0	450	325	58.80%
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	0	0	94	119	16.16%
Hoary Bat	<i>Lasiurus cinereus</i>	0	0	89	80	12.82%
	Number of Files:	3109		3025		
	Files with Identifiable Calls:	0		1318		
	High Frequency:	0		7		
	Low Frequency:	0		1309		
	High/Low Frequency	0		2		

Appendix I

Significant Wildlife Habitat (SWH)

Significant Wildlife Habitat Screening					
Significant Wildlife Habitat Type	ELC Habitat (for internal use)	General Habitat Description	ELC Observed	SWH Present	Comments
Wildlife Concentration Areas					
Waterfowl Stopover and Staging Areas (Terrestrial)	CUM1, CUT1, plus annual spring flooding	Fields with sheet water during the spring	CUM1, CUT1	No	No sheet flooding observed
Waterfowl Stopover and Staging Areas (Aquatic)	MAS1 to MAS 3, SAS1, SAM1, SAF1, SWD1 to SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration	No	N/A	N/A
Shorebird Migratory Stopover Area	BBO1 to 2, BBS1 to 2, BBT1 to 2, SDO1, SDS2, SDT1, MAM1 to 5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and unvegetated shoreline habitats	No	N/A	N/A
Raptor Wintering Area	At least one of FOD, FOM or FOC and one of CUM, CUT, CUS, CUW	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors	FOM7, CUM1, CUT1	Yes	N/A
Bat Hibernacula	CCR1, CCR2, CCA1, CCA2	Caves, mine shafts, underground foundations and Karsts. Hibernacula relatively poorly known	No	N/A	N/A
Bat Maternity Colonies	FOD, FOM, SWD, SWM	Mature forests with >10 ha of large diameter (>25 cm dbh) wildlife trees, 21 snags per hectare preferred	FOM7, SWM1-1	No	Does not meet habitat criteria
Turtle Wintering Areas	Classes SA, MA, OA and SA, ELC Community Series FEO and BOO	Within core habitat, water must be deep enough not to freeze and have soft mud substrates	No	N/A	N/A
Reptile Hibernaculum (Turtles assessed separately)	Any Ecosite with the exception of very wet communities, Five-lined Skink prefers FOD and FOM communities, Ecosites FOC1 & FOC3	Below frost lines in burrows, rock crevices and other natural or naturalized locations. Rock crevices, talus slopes, etc.	FOM7	No	N/A
Colonial Nesting Bird Breeding Habitat (Bank and Cliff)	CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	Eroding banks, sandy hills, borrow pits, steep slopes, sand piles, cliff faces, bridge abutments, silos, barns. Man-made structure and disturbance over 2 years old	CUM1, CUT1	No	Does not meet habitat criteria
Colonial Nesting Bird Breeding Habitat (Tree/Shrubs)	SWM2, SWM3, SWM5, SWM6, SWD1, 7, FET1	Live or dead standing trees (typically 11 to 15 m tall) in wetlands, lakes, islands and peninsulas. Occasionally shrubs and emergent vegetation.	SWM1-1	No	Does not meet habitat criteria
Colonial Nesting Bird Breeding Habitat (Ground)	MAM1 - 6, MAS1 - 3, CUM, CUT, CUS	Rocky island or peninsula within a lake or river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs	CUM1, CUT1	No	Does not meet location criteria
Migratory Butterfly Stopover Areas	At least one of FOD, FOM, FOC and CUP and one of CUM, CUT, CUS	At least 10 ha in size with combination of field and forest within 5 km of Lake Ontario	CUM1, CUT1, FOM7	No	Does not meet location criteria
Landbird Migratory Stopover Areas	FOC, FOM, FOD, SWC, SWM, SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario	FOM7, SWM1-1	No	Does not meet habitat criteria

Significant Wildlife Habitat Screening					
Significant Wildlife Habitat Type	ELC Habitat (for internal use)	General Habitat Description	ELC Observed	SWH Present	Comments
Deer Yarding Areas	FOM, FOC, SWM, SWC, CUP2, CUP3, FOD3, CUT MNR to confirm	Core (Stratum I) is located within Stratum II. Core is critical for survival of deer during winter months	No	N/A	Confirmed using MNDMNRF wintering layer
Deer Winter Congregation Areas	FOC, FOM, FOD, SWC, SWM, SWD	Large woodlots typically >100 ha, however smaller woodlots with densities of 0.1 - 1.5 deer/ha may also be considered	No	N/A	Confirmed using MNDMNRF wintering layer
Rare Vegetation Communities					
Cliffs and Talus Slopes	TAO, TAS, TAT, CLO, CLS, CLT	Cliff is vertical to near vertical >3 m tall Talus slope is rock rubble at base of a cliff made up of coarse rock debris	No	N/A	N/A
Sand Barren	SBO1, SBS1, SBT1	Typically >0.5 ha with exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion	No	N/A	N/A
Alvar	ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW	Typically >0.5 ha with level, mostly fractured calcareous bedrock	No	N/A	N/A
Old Growth Forest	FOD, FOM, SWD, SWC, SWM	Woodland areas 30 ha or greater with at least 10 ha interior habitat assuming 100 m buffer at edge of forest	FOM7, SWM1-1	N/A	Does not meet habitat criteria
Savannah	TPS1, TPS2, TPW1, TPW2, CUS2	Any tallgrass prairie habitat that has tree cover between 25 - 60%	No	N/A	N/A
Tallgrass Prairie	TPO1, TPO2	Dominated by prairie grasses with < 25% tree cover	No	N/A	N/A
Other Rare Vegetation Communities	Provincially Rare S1, S2 and S3 vegetation communities, refer to Appendix M of SWHTG	Beaches, fens, forest, marsh, barrens, dunes and swamps	No	N/A	Confirmed using SWHTG
Specialized Habitat for Wildlife					
Waterfowl Nesting Area	MAS1 to 3, SAS1, SAM1, SAF1, MAM1 to 6, SWT1, SWT2, SWD1 to 4	Extends 120 m from a wetland (>0.5 ha) or a wetland (>0.5 ha) and any small wetlands or a cluster of 3 small wetlands where waterfowl nesting is known to occur	SWT2	Yes	N/A
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	FOD, FOM, FOC, SWD, SWM, SWC directly adjacent to riparian areas	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands or in structures over water	FOM7, SWM1-1	Yes, presumed but no nets observed	N/A
Woodland Raptor Nesting Habitat	All forested ecosites May also occur in SWC, SWM, SWD, CUP3	All natural or conifer plantation woodland / forest stands >30 ha with >10 ha of interior habitat	FOM7, SWM1-1	Yes, presumed but no nets observed	N/A
Turtle Nesting Areas	Exposed mineral soil area adjacent (<100m) or within MAS1 to 3, SAS1, SAM1, SAF1, BOO1, FEO1	Close to water with sand and gravel that turtles are able to dig in, located in open sunny areas.	No	N/A	N/A
Seeps and Springs	Any forested Ecosite within a headwater area	Any forested area (with >25% meadow/field/pasture) within headwaters of a stream or river system	FOM7, SWM1-1	No	None observed

Significant Wildlife Habitat Screening					
Significant Wildlife Habitat Type	ELC Habitat (for internal use)	General Habitat Description	ELC Observed	SWH Present	Comments
Amphibian Breeding Habitat (Woodland)	FOC, FOM, FOD, SWC, SWM, SWD	Presence of a wetland, pond or woodland pool >500m ² , within or adjacent to woodland	FOM7, SWM1-1	No	No pools observed
Amphibian Breeding Habitat (Wetlands)	Classes SW, MA, FE, BO, OA, SA Typically isolated (>120 m) from woodland ecosites	Wetlands >500m ² (25m diameter), supporting high species diversity	No	N/A	N/A
Woodland Area-Sensitive Breeding Bird Habitat	FOC, FOM, FOD, SWC, SWM, SWD	Habitats where interior forest birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha	FOM7, SWM1-1	No	Does not meet size or age criteria
Habitat of Species of Conservation Concern (other than Threatened or Endangered)					
Marsh Breeding Bird Habitat	MAM1 to 6, SAS1, SAM1, SAF1, FEO1, BOO1 Green Heron: SW, MA, CUM1	Nesting occurs in wetlands consisting of shallow water with emergent aquatic vegetation Green Heron: edge water habitat	No	N/A	N/A
Open Country Bird Breeding Habitat	CUM1, CUM2	Large grassland areas (including natural and cultural field and meadows) >30 ha	CUM1	No	Does not meet size criteria
Shrub/Early Successional Bird Breeding Habitat	CUT1, CUT2, CUS1, CUS2, CUW1, CUW2	Large field areas succeeding to shrub thicket habitats >10 ha in size	CUT1	No	Does not meet size criteria
Terrestrial Crayfish	MAM1 to 6, MAS1 to 3, SWD, SWT, SWM CUM1 with inclusions above meadow marsh or swamp ecosites	Wet meadow edges of shallow marshes Only found in SW Ontario	SWM1-1, CUM1	No	Not observed
Special Concern and Rare Wildlife Species	Varies	All Special Concern and Provincially Rare plant and animal species. May also consider Area Sensitive and Culturally Sensitive Species	N/A	N/A	N/A
Animal Movement Corridors					
Amphibian Movement Corridors	Corridors found in all ecosites associated with water, determined from breeding habitats	Determined as part of breeding habitat assessment	SWM1-1, SWT2	No	No amphibians detected on site during evening surveys, only off site
Deer Movement Corridors	All forested Ecosites	All proposals within Stratum II Deer Wintering Area have potential for corridors	No	N/A	Confirmed using MNDMNRF wintering layer
General Comments:					