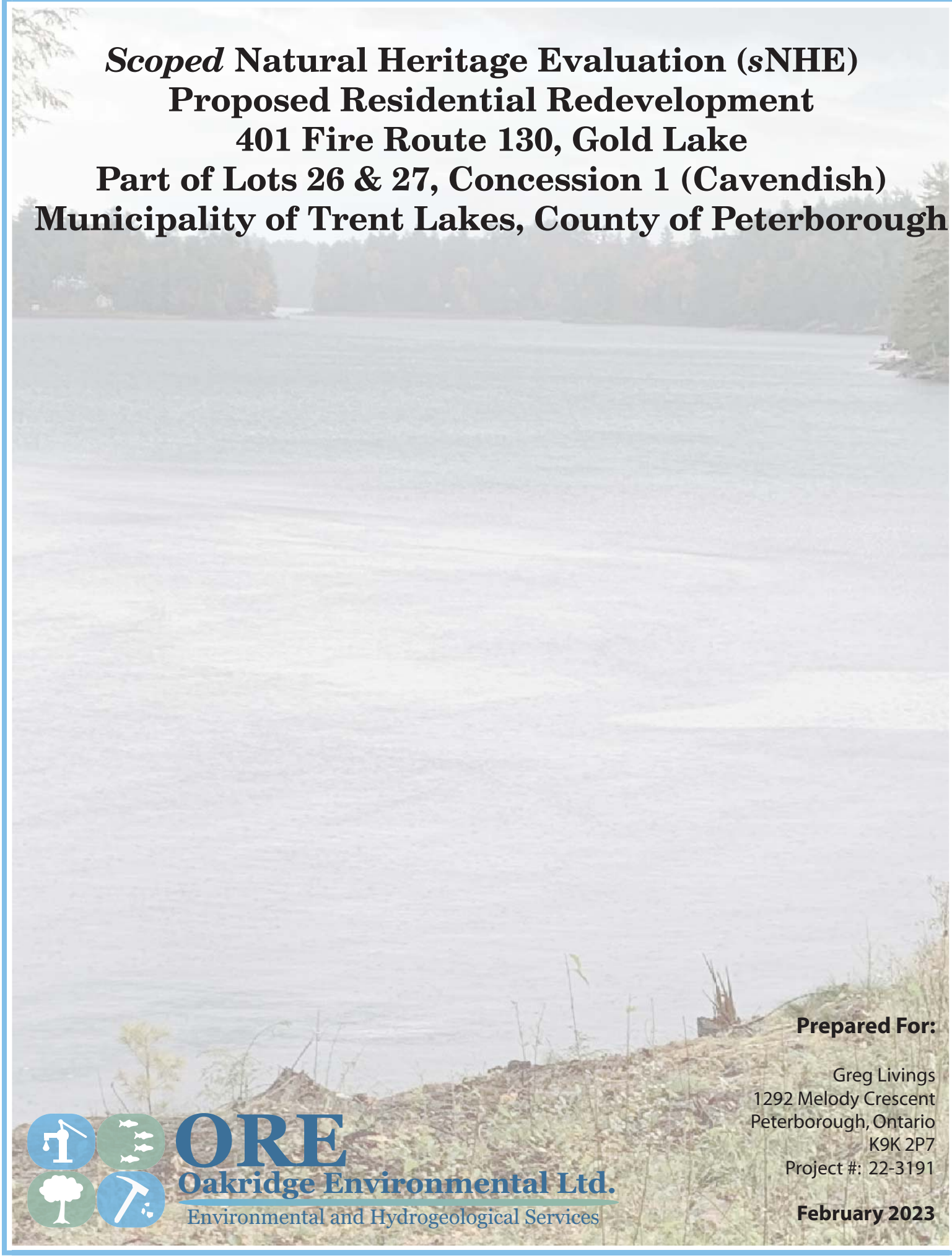
Scoped Natural Heritage Evaluation (*s*NHE)
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes, County of Peterborough



Prepared For:

Greg Livings
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K9K 2P7
Project #: 22-3191

February 2023

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

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February 16th, 2023

1292 Melody Crescent
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Attention: **Greg Livings**

Re: *Scoped* Natural Heritage Evaluation (*s*NHE)
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes, County of Peterborough
ORE File No. 22-3191

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

ORE staff completed one (1) site inspection during the fall season. Only one (1) Key Natural Heritage Feature was detected during our surveys: Gold Lake - Significant Fisheries habitat. As such, this *s*NHE addresses this Key Natural Heritage Feature, Significant Wildlife Habitat (SWH) and Species at Risk (SAR) identified potentially on or near the property.

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

Yours truly,
Oakridge Environmental Ltd.

Rob West, HBSc., CSEB
Senior Environmental Scientist

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1.0 Introduction

1.1 General

Oakridge Environmental Ltd. (ORE) is pleased to provide this *Scoped* Natural Heritage Evaluation (*s*NHE) for the above-referenced property (referred to as the subject site) located on the south shore of Gold Lake, north of Buckhorn, Ontario.

The current property owner is considering redevelopment of the residential property. The redevelopment is proposed to include construction of a two (2) story dwelling, deck and bunkie addition, as well as private servicing (referred herein as the "redevelopment"). It is understood that the redevelopment will be considered as "infill", will require a Zoning By-law amendment and will be subject to the Growth Plan for the Greater Golden Horseshoe (GPGGH).

The property is located within 120 m of a hydrologic feature, and is located within the GPGGH. As a result, an *s*NHE is required to support the application.

The purpose of the study is to characterize the site conditions, determine if there are any Key Natural Heritage Features (KNHFs) on the subject site, and demonstrate that the subject property can sustainably accommodate the proposed redevelopment without resulting in unacceptable impacts to any identified environmentally sensitive features. The *s*NHE also includes a high level assessment of Species at Risk (SAR) on and in the vicinity of the site, as the inspection was completed outside the season to detect the majority of SAR.

1.2 Site Description, Location and Access

The subject site is a waterfront property situated on the south side of Gold Lake at 401 Fire Route 130, within part of Lots 26 and 27, Concession 1 (former Cavendish), in the Municipality of Trent Lakes, County of Peterborough (Figures 1 and 2). The Kawartha Highlands Signature Site Park is located just south of the site.

The property has a total area of approximately 0.6 acres consisting of an existing cottage residence and services. An unevaluated wetland is located immediately to the west.

Adjacent lands consist of residential cottage development that directly abuts Gold Lake.

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 due to it requiring a zoning by-law amendment, 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 (MNDMNRF'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, and
- Species at Risk.

The MNDMNRF's assessment requirements under the *"Significant Wildlife Habitat Criteria Schedules For Ecoregion 5E"* is applicable to Planning Applications. ORE staff reviewed the site's vegetation and formed an 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 Conservation Authority

The subject site is not regulated by a Conservation Authority (CA). As such, the site is not subject to any associated regulation administered by a CA.

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

It is understood that the proposed redevelopment is subject to a Planning application and related approvals, and that the Growth Plan is applicable.

In July of 2017, the Ministry of Municipal Affairs and Housing (MMAH) 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). 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 within 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 Municipality, 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 PSW) from development and site alteration.

ORE staff have identified any/all KNHFs/KHFs that apply to the redevelopment. The applicable setbacks have been applied, as per the Growth Plan.

2.4 County of Peterborough

The redevelopment will be subject to a Zoning By-law amendment. It is expected that the Municipality will be the responsible authority for reviewing the application to ascertain whether the natural heritage objectives have been adequately addressed in this *s*NHE. The Municipality provided the following direction to the proponent with respect to the Growth Plan and their allowance for infill-redevelopment:

"*Section 4.2.4.3 of the GPGGH provides an exemption from the above policy requirement for shoreline development as set out in Section 4.2.4.5 below:*

…in developed shoreline areas of inland lakes that are designated or zoned for concentrations of development as of July 17, 2017, infill development, redevelopment and resort development is permitted subject to municipal and agency planning and regulatory requirements if the development will:

a) be integrated with existing or proposed parks and trails, and will not constrain ongoing or planned stewardship and remediation efforts;

b) restore, to the maximum extent possible, the ecological features and function in developed shoreline areas; and…

The proposal does not constitute "redevelopment" in the manner defined by the GPGGH and is not "resort development". The term infill is not defined in the GPGGH, however, "development" is defined as:

"The creation of a lot, a change in land use or the construction of buildings and structures requiring approval under the Planning Act…" On the basis of the above definition, the term "infill" could be applied or interpreted to mean:

- *Lot creation;*
- *A change in land use; or;*
- *The construction of buildings and structures requiring approval under the Planning Act.*

In this case, given that the application proposes to remove and replace existing shoreline structures within a developed shoreline, the term "infill"would apply to the construction of new buildings on an existing shoreline lot that is designated and zoned for shoreline residential use.

In the analysis of this report, I will consider the GPGGH policy as it applies to this form of infill development."

This study has been prepared to address the typical requirements of the Municipality and County. The standard EIS requirements documented within the County of Peterborough

OP is provided in Appendix B.

3.0 Scope of Work

In completing this *s*NHE, the following tasks were completed:

- Relevant background information regarding the site (air photos, topographic mapping, etc.) was compiled and reviewed. Queries of the following databases were completed: MNDMNRF's Natural Heritage Information Centre (NHIC) website database, iNaturalist database, eBird database, 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.

- One (1) site inspection was completed in the fall season. 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 on a northeast-facing, bedrock-controlled ridge which rises above Gold Lake (Figure 2). The ridge is one of several small peninsulas that extend into Gold Lake. The total topographic relief on the site is approximately 7 m, as measured from the top of the ridge to the lake level.

The entire site is expected to drain toward Gold Lake. Other than the lake, there are no mapped watercourses on the site. A small unevaluated wetland occurs about 30 m to the west of the site, occupying part of a narrow, linear bedrock valley that separates the peninsula from another similar feature to the north.

4.2 Geological Setting

As illustrated by Figure 3, the subject site occurs within an area dominated by Precambrian bedrock outcroppings and subcroppings, generally mapped as having minimal soil cover. These soils are referred to as the "Precambrian bedrock-drift complex", consisting of a silty sand, shield-derived till (with minor gravel) that discontinuously mantles the rock.

The Geological Survey of Canada generally describes these soils as:

> *"Till veneer: discontinuous cover over rock; average thickness less than 1 metre on interfluves, thickens locally in small depressions and on the lee sides of bedrock knobs, may include discontinuous, thin (less than 1 m) pockets of sand and gravel or silty clay in low lying areas"*

As such, their composition will reflect the composition of the bedrock in the upgradient (i.e., "up-ice") direction from which the glacial ice advanced.

The mapping also indicates that highly layered (i.e., "laminated" or "varved") glaciolacustrine deposits occur, covering the subject site. As these deposits locally cover the bedrock and fill bedrock depressions, their thickness can be controlled by the depth of the rock. These soils are thought to be remnants of ancient innundation by post-glacial lakes. The glaciolacustrine deposits are likely to overlie the till in some areas and are not expected to be very thick.

There are also extensive deposits of organic soils (muck) in the lower-lying areas, generally associated with bedrock valleys that contain wetlands. These wetlands are often underlain by coarse textured glaciolacustrine soils, although none are mapped in the site area.

The variability of the local soil conditions is reflected in local well records from Ministry of the Environment, Conservation and Parks' database. For example, the log of nearby well No. 5116961 indicates the presence of 3.1 m of red sand above the (granitic) bedrock. Another nearby well (No. 5120546) indicates the driller encountered recent gravel fill above the rock. In contrast, nearby well No. 5119535 encountered only 0.9 m of "topsoil and stones" above the bedrock. Unfortunately, none of the recorded wells are directly representative of the on-site conditions.

The published mapping illustrates that the bedrock has a dominant east-northeast structural trend, resulting in numerous parallel bedrock ridges and valleys.

Given the elevated conditions over most of the subject property, a shallow water table condition is not expected, other than along the lakeshore.

5.0 Background Data

5.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by the Ministry of Northern Development, Mines, Natural Resources and Forestry (NDMNRF). Within the database, Ontario has been divided into a grid consisting of 1 km^2 areas or regional squares, each given a unique identifier. The squares can be searched for species of conservation concern, plant communities, wildlife concentration areas and natural areas. This search includes 120 m of adjacent lands around the property.

The search area falls within two (2) of the 1 km^2 squares: 17QK1554 & 17QK1654.

The query indicates that one (1) Natural Area and one (1) Wildlife Concentration Area are recorded in the area:

Natural Areas:

Kawartha Highlands Signature Site Park (Natural Environment Class)

Wildlife Concentration Area:

Colonial Waterbird Nesting Area - this habitat is likely associated with the wooded swamp directly west of the subject site.

The query indicates no Species at Risk (SAR) have been recorded in the area of the subject site. One (1) provincially rare species of note (not a SAR - tracked by the NHIC) has been recorded in the area:

Common Name	Scientific Name	S-Rank
Mottled Darner	*Aeshna clepsydra*	S3

Our site inspection included targeted searches for potential SAR habitat of this species. An excerpt from the NHIC's website illustrating the location of the squares relative to the 120 m search area around subject site is also included in Appendix C.

5.2 Ontario Breeding Bird Atlas (OBBA)

The OBBA[1] 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 km^2 area mapped as 17TQK15, Region 16, Peterborough. The Summary Sheets for this atlas area are provided in Appendix D.

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

Common Name	**Scientific Name**	**SARO Status**
Barn Swallow	*Hirundo rustica*	Threatened
Bobolink	*Dolichonyx oryzivorus*	Threatened
Canada Warbler	*Cardellina canadensis*	Special Concern
Eastern Meadowlark	*Sturnella magna*	Threatened
Eastern Whip-poor-will	*Antrostomus vociferus*	Threatened
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern
Wood Thrush	*Hylocichla mustelina*	Special Concern

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

5.3 eBird

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as "hotspots" and list species of bird they detect each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is the Beaver Lake Road (L2193859) site, located approximately 2.6 km northwest of the site. A total of one-hundred and one (101) species were recorded at this hotspot (Appendix F). Among the 101 species detected, seven (7) were SAR and are included below:

Common Name	**Scientific Name**	**Status**
Barn Swallow	*Hirundo rustica*	Threatened
Canada Warbler	*Cardellina canadensis*	Special Concern
Eastern Wood-Pewee	*Contopus virens*	Special Concern

[1] managed by Bird Studies Canada.

Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern
Golden-winged Warbler	*Vermivora chrysoptera*	Special Concern
Olive-sided Flycatcher	*Contopus cooperi*	Special Concern
Wood Thrush	*Hylocichla mustelina*	Special Concern

Brief descriptions of each of the SAR and their preferred habitats are included in Appendix E.

5.4 iNaturalist

The iNaturalist database provides a geographical site map which contains individual species occurrences. The NHIC version of the iNaturalist database is specific to those species tracked by the NHIC. These include SAR as per those identified in the Species at Risk Ontario website and also provincially rare species that the NHIC tracks in their records. The occurrence data includes the professional/surveyors name, confirmation identification by other professionals, occurrence photos, and the date the rare species was observed. The search extent is an approximate 2 km^2 area centred on the site.

The iNaturalist database was reviewed to determine if any SAR sightings have occurred either on, or within the vicinity of the subject site. One (1) SAR species was reported either directly on or in the general vicinity of the subject site. The SAR occurrence has been compiled below:

Common Name	**Scientific Names**	**SAR Status**
Midland Paint Turtle	*Chrysemys picta marginata*	Special Concern*

*COSEWIC status only - not a provincial SAR

The description of the SAR species occurrence is provided in Appendix E.

5.5 Fish On-Line

The Fish On-Line database was reviewed. This database is a website database operated by the Province that includes information on where to find certain species of fish in Ontario. The information includes fish species observations, sanctuaries, monitoring programs, (etc.), and identifies the types of species caught within the watercourse.

No data were available for this area within the Fish On-line database.

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 conditions 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 inspection, 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).

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 outside of the migratory/breeding bird season. Nevertheless, 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.

All species overheard or observed during the survey were recorded.

6.3 Mammals

Mammals were detected utilizing the methodologies outlined in the MNDMNRF'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 MNDMNRF's October 2000 - Significant Wildlife Habitat Technical Guide.

6.4 Herptiles

The inspection was conducted outside of the typical season for observing herptiles. As such, a review of herptile habitat was conducted. ORE staff conducted visual encounter surveys while searching through brush piles, rolled over lumber and deadfall to determine whether any significant species of herptile could be detected. The visual encounter survey extended to the adjacent roads to identify dead-on-road herptiles. Any incidental observations were recorded.

6.5 Significant Wildlife Habitat (SWH)

SWH has been evaluated utilizing the *Significant Wildlife Habitat Criteria Schedules for Ecoregion 5E*, published by the MNDMNRF (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 subject property in the area of the proposed severance 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 one (1) site inspection on the following date:

Date of Inspection	**Time of Inspection**	**Temp. ^{o}C**	**Beaufort (Wind) Index**	**Conditions and Surveys**
Diurnal - October 14th, 2022	10:30 AM - 12 PM	15	2 - Light Breeze	Mild fall day with precipitation towards the end of the inspection period. Site visit to review vegetation setting and detect any potential SAR Avian during the fall migration.

The above inspection was 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 ecotypes.

7.2 Ecological Land Classification (ELC)

ELC inspections were focussed on the proposed redevelopment area and immediate adjacent lands, as per the recommendations of the MNDMNRF's Natural Heritage Reference Manual. The identified ELC communities are illustrated on Figure 4, with photos of the communities/site conditions 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 Ecological Land Classification (ELC), the draft 2008 ELC for Southern Ontario* and/or the *Field Guide to Forest Ecosystems of Central Ontario - SCSS Field Guide FG-01 (1997*).

Upland Communities:

1. **Jack Pine-White Pine-Red Pine (ES13.1)**

The Forest Ecosystems - SCSS Field Guide FG-01 describes ES13.1 as being dominated by Jack Pine-White Pine-Red Pine on dry to moderately fresh soils. It has understorey with moderate levels of conifer and hardwood regeneration, ericaceous and low hardwood

shrubs, feather-mosses and lichens. It also has a low number of herbs and the soils are typically sandy to coarse loam and very shallow to shallow.

This pine dominated woodland habitat that formerly covered the majority of the subject property was cleared by the property owner as there was an abundance of blow-down on the property. Some remnants of this woodland still exist around the old cabin area in the eastern portion of the property. However, all of the trees have been removed between the two (2) existing cabins on the subject site. The trees have been cleared to the shoreline and no vegetation buffer currently exists.

2. **Rock Barren - Acidic/circumneutral (ES8)**

Refers to the bare bedrock areas that contain mosses, lichens and a low number of herbs. There are no trees and only some low-lying shrubs.

The rock barren habitat occurs directly along the shoreline where there is little to no vegetation cover in the transition between the lake and the woodland community identified above.

Aquatic Communities:

3. **Open Water (OAW)**

The 1998 ELC describes OAW as an environment containing no macrophyte vegetation and no tree or shrub cover. This ecosite tends to be dominated by plankton and has a lake trophic status.

This community describes the offshore area of the lake that abuts the subject property. There was little to no vegetation in the littoral zone, as bedrock occurs at the lake bottom with skiffs of sand in the bedrock depressions. There is also very little shoreline vegetation as wave action along the shore likely removed any potential sediments that vegetation could adhere to. The trees directly up from the water line commonly use soil-filled cracks and crevasses, allowing the bole of the tree to extend further down towards the shoreline.

The proposed redevelopment will not occur within the OAW community. The property owner may seek to insert a dock and/or boathouse, however, these would be subject to another building application and/or agency approvals. If the proponent intends to insert a dock, they should check with the Municipality to determine whether there is a permitting process either through the Municipality of potentially via the MNDMNRF.

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 G. Relevant observations of faunal activities on and adjacent to the site are briefly discussed below.

7.3.1 Avifauna

ORE staff completed one (1) diurnal migratory bird/breeding bird inspection. The single inspection was completed in the midmorning period on October 14th, 2022.

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 subject lot, nor were any observed or overheard on the neighbouring properties or the lake.

7.3.2 Herptiles

Herptiles include amphibians, salamanders, lizards, turtles and snakes species. Diurnal 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 on the private road into the location of the subject site 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 survey was to detect those herptiles listed within SARO.

No herptile species were detected during the survey.

7.3.3 Mammals

Mammals include species such as fox, coyote, white-tailed dear, 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 mammals that have attained SAR status occur within Northern and Southwestern Ontario. Very few of those mammal species listed within SARO occur in the Peterborough region, other than certain bats and Mountain Lion (*Puma concolor*).

There are no public records of Mountain Lion on the internet or local newspapers for this

area.

ORE staff did not conduct nighttime surveys, therefore, a bat assessment was not completed. The subject site does not possess any appreciable wooded areas as these have been removed, presumably, for the purpose of the development. If the trees that were removed contained cavity/roosting nesting sites for communal bats, they are no longer available.

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. No SAR were identified on-site during the inspections. It is possible that certain woodland related SAR could have been associated with the subject site prior to the tree removal on-site.

The wetland area to the west of the subject property could contain turtle species. However, no turtle nests were observed directly within subject site area as the lack of soils and steep bedrock face along the shoreline would not allow for this.

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 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 possesses an abundance of fractured bedrock openings at surface that would be considered potential entryways for snake hibernaculum.

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 H indicating the potential for SWH to occur based on the criteria provided by the MNDMNRF 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 MNDMNRF criteria) and as indicated in Appendix H.

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

- Amphibian Movement Corridors;
- Waterfowl Stopover and Staging Areas (Aquatic);

- Shorebird Migratory Stopover Area;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;
- Amphibian Breeding Habitat (Wetlands);
- Marsh Breeding Bird Habitat, and
- Furbearer Movement Corridor.

All of the amphibian, marsh bird and shorebird/waterfowl staging, nesting and stopover SWH identified above are entirely associated with Gold Lake and the wetland habitat to the west of the subject site. Only the Bald Eagle/Osprey - nesting, foraging, and perching SWH and furbearer movement SWH occur directly on-site and could potentially be impacted by the proposed redevelopment.

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 5E.

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

9.0 Impact Assessment

9.1 Sensitive Features

The main receptor with respect to potential impacts associated with future redevelopment of the subject site are Gold Lake and the unevaluated wetland west of the subject site. Potential impacts considered herein include the following:

- Potential impacts with respect to clearing vegetation to the edge of Gold Lake;
- Potential impacts to the water quality of Gold Lake from septic effluent;
- Potential impacts to Local SWH by vegetation clearing;
- Potential impacts to runoff water quality from erosion and sedimentation during the construction phase and present lack of vegetation on the property's sloped shoreline;
- Potential impacts from importation of fill to the site to raise or grading of parts of the lot for development;
- Potential impacts from introduction of invasive non-native species during the construction and post-construction era via construction equipment and imported fill materials, respectively, and
- Potential impacts from construction activities that could potentially indirectly impact fisheries within Gold Lake.

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 tracked species has been detected in the 1 km square areas that the subject site falls within:

- Mottled Darner

The subject site does not possess suitable habitat for Mottled Darner. Even though this species prefers small lakes or bays of larger lakes, it requires marshy or boggy edges, and/or clear water with water lilies for its principal habitat. The subject property occurs within an embayment of a larger lake system, however, the naturally hardened shoreline lacks marshy or boggy edges and does not contain any water lilies for this dragonfly to perch and forage from. The shoreline is hardened with platy weathered bedrock and no floating-leaved or emergent vegetation along the entire shore.

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:

- Barn Swallow - habitat is marginal in the area of the existing small cottages, however, no mudnests were identified on these structures suggesting recent use by this species.

- Wood Thrush - possible within the secondary succession woodland habitats that surround the subject site, however, the majority of the trees on the subject lot were removed by the property owner. If Wood Thrush once nested on-site, the habitat no longer exists.

- Eastern Meadowlark - there are no hayfield habitats near or on the subject property. Therefore, Eastern Meadowlark would not be impacted by the proposed redevelopment.

- Bobolink - there are no agricultural fields on or near the subject property. Therefore Bobolink would not be impacted by the proposed redevelopment.

- Canada Warbler - Canada Warbler may have been detected within the channelized feature that drains the westerly wetland feature to Gold Lake. It is possible that Canada Warbler could still nest alongside this feature as the neighbouring property owners have not removed trees alongside this watercourse. However, if Canada Warbler nested on-site, it may not anymore due to the tree removal.

- Eastern Whip-poor-will - there is an abundance of woodland in the area of

the subject property whereby Eastern Whip-poor-will could nest. The forest cover has been removed on the subject site, therefore, this species would be less likely to return to the subject property for any part of its life cycle.

- Eastern Wood-Pewee - similar to the Eastern Whip-poor-will, the Eastern Wood-Pewee may have used the subject property in the past as suitable woodland was present within this parcel prior to the removal.

- Evening Grosbeak - the surrounding area contains an abundance of mixed deciduous and coniferous woodlands, in association with the wetland to the west and the lakeshore. The combination of the woodland and watercourses is good quality habitat for Evening Grosbeak. However, the trees have been removed over the majority of the property and the habitat no longer exists on-site for this species.

Among the species listed above, the most likely candidate SAR to have either occurred on the subject site or within the neighbouring lands are the Eastern Wood-Pewee, Eastern Whip-poor-will, Wood Thrush, Canada Warbler, and Evening Grosbeak. None were identified on the site. However, the inspection was completed outside the peak period to detect these species. Regardless, the subject site may have possessed suitable habitat for some, or all, of the woodland related SAR listed above, prior to the tree removal.

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
- Canada Warbler
- Eastern Wood-Pewee
- Evening Grosbeak
- Golden-winged Warbler
- Olive-sided Flycatcher
- Wood Thrush.

None of these species were detected on-site during the fall season inspection. However, our inspection was conducted outside the peak period to detect the majority of these species. The former woodland that was present on the subject site could have provided habitat for the woodland related SAR above which have already been discussed in the OBBA section. As for the remaining species such as the Golden-winged Warbler and the Olive-sided Flycather, neither of these species would utilize the subject site as their habitat is not present. However, both of these species could be associated with the wooded swamp feature to the west of the subject property. This feature does not occur on the subject property and would not be impacted by the proposed redevelopment. Although

LIO suggests the wetland habitat occurs west of the west property boundary of the subject site, this narrow corridor is a bedrock dominated drainage channel that contains very little wetland vegetation. The wetland that contains contiguous wetland vegetation occurs further southwest of the subject site.

9.5 iNaturalist

It is possible that Midland Painted Turtle may utilize the open water areas associated with Gold Lake. However, there were very few perching areas offshore that this turtle would utilize. The wetland to the west of the subject site could harbour Midland Painted Turtles, but most likely this turtle was observed along the shoreline elsewhere on Gold Lake or possibly within the nearby unevaluated wetland feature.

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:

SWH Present	**SWH Description/ Location**	**Potential Impact**
Amphibian Movement Corridors	Directly adjacent to the subject site within the small bedrock-cut valley that drains the off-site wetland to Gold Lake.	• On-site vegetation removal impacting runoff water quality. • Buffer vegetation removed already. • Shoreline works that impede movement in shallow offshore/shoreline zone.
Waterfowl Stopover and Staging Areas (Aquatic)	Offshore areas of Gold Lake.	• Removal of the on-site natural vegetation, that birds rely on to minimize the visual presence of development. • Buffer vegetation removed already.
Shorebird Migratory Stopover Area	Offshore areas of Gold Lake.	• Removal of the on-site natural vegetation, that birds rely on to minimize the visual presence of development. • Buffer vegetation removed already.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nesting and Foraging trees along the shoreline for raptor species.	• Nesting, Foraging and Perching habitats already removed on-site by owner.

Amphibian Breeding Habitat (Wetlands)	Breeding habitats associated with wetland to the west of the subject site.	• Vegetation removal in the area of the bedrock valley. • Unlikely as it would be off-site.
Marsh Breeding Bird Habitat	Breeding habitats associated with wetland to the west of the subject site. No marsh habitats on-site or along the Gold Lake shoreline.	• Vegetation removal during the breeding bird period could disturb nesting birds. • Trees already removed, unlikely remaining construction would impact breeding birds.
Furbearer Movement Corridor	The shorelines on either side of the subject site possess dense woodland habitats and maintain a connective shoreline corridor for fur bearers.	• Tree removal within 15 m of the shoreline would impact fur bearer movement/connectivity. • Trees have already been removed creating a disjunct habitat along the shoreline.

The above-mentioned SWH are predominantly associated with the off-site unevaluated wetland and the associated bedrock valley channel. The remaining woodland related SWH would have been present on-site prior to the tree removal on the property. Typically, mitigation is applied to the proposed development to avoid and retain the on-site SWH, however, the removal of the on-site woodland has already interfered with some of the above listed SWH.

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

9.7 Identified SAR/SAR Habitat

No SAR were detected either directly within the proposed redevelopment area or in the surrounding neighbouring properties, however, the inspection was completed outside the peak period to detect SAR.

The former woodland habitat on the property may have been suitable for certain SAR avian, such as those identified in previous sections.

9.8 Fisheries

Potential impacts to fisheries within the Gold Lake would mainly be in the form of the following:

- removal or degradation of the vegetation directly upgradient of Gold Lake;
- insertion of fill materials adjacent to Gold Lake within lands where overland

flows could entrain sediments and drain towards the lake, and
- heavy-duty equipment noise and/or possibly blasting (if necessary) during construction while spawning occurs along the shoreline.

Gold Lake contains trout species that could spawn in the offshore areas of the subject property.

Recommendations to mitigate impacts to 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;
- vegetation removal or disturbance upgradient of Gold Lake;
- 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 and maintaining vegetation buffers will be required.

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

10.0 Conclusions

10.1 Unfortunately, all of the mature forest vegetation between the proposed redevelopment area and the lakeshore has been removed.

Removing the trees upgradient of the lakeshore can significantly impact runoff quality and inherently, lake water quality along with fish and fish spawning habitat. Trees buffer the nutrient-rich runoff from development and prevent the lake quality from deteriorating. Removing all of the vegetation along the shoreline and replacing it with lawn can have a profound impact on the lake's phosphorus (nutrient) levels which increases algal blooms and could impact coldwater fish, which may occur in Gold Lake.

The smaller cottage situated at the east end of the lot is the ideal setting for a cottage on

this lot, whereby development is nestled among the mature trees while retaining the majority of natural vegetation.

The property owners have assured ORE staff that the intent of the tree removal was not to replace it with lawnspace, but to create a better quality woodland habitat in this area through regrowth/rehabilitation and plantings.

That being said, to offset the tree and forest habitat loss on the property, it is ORE's opinion that the site should be subject to a rehabilitation program to reinstate the majority of the vegetation. In doing so, the proposed rehabilitation will comply with Section 4.2.4.3 of the GPGGH exemption policy requirement for shoreline development as set out in Section 4.2.4.5 below:

"*…in developed shoreline areas of inland lakes that are designated or zoned for concentrations of development as of July 17, 2017, infill development, redevelopment and resort development is permitted subject to municipal and agency planning and regulatory requirements if the development will:*

b) restore, to the maximum extent possible, the ecological features and function in developed shoreline areas; This, in combination with a standard minimum setback should be sufficient to curtail the habitat loss and improve conditions on-site as they relate to Gold Lake".

Details are provided in the Recommendations section that follows.

10.2 Provided the redevelopment can adhere to the proposed setback requirements illustrated on Figure 7, and rehabilitation plans outlined above, the infill/redevelopment should be permitted.

The main concern with respect to the infill/redevelopment is respecting the proposed rehabilitation efforts, and ensuring that any proposed construction activities remain outside this limit. Detailed recommendations are provided in the following sections to protect Gold Lake from potential impacts.

10.3 Avian surveys were conducted in the mid morning period outside the peak Breeding Bird/Migratory Bird period. No Species at Risk avian or other fauna were identified on the property during these surveys. It is possible that a SAR bird(s) and/or SAR bats could have nested/roosted on the property prior to the tree removal.

It is our assumption that no SAR birds or SAR bats were harmed, harassed or culled as a result of the on-site tree removal. Consequently, there are no requirements under the Endangered Species Act (ESA), Official Plans/PPS, or the Growth Plan with respect to Endangered or Threatened species and the proposed redevelopment.

No Special Concern species were detected on either the subject site nor the neighbouring properties in the vicinity of the subject site. Therefore, no requirements are necessary under the Significant Wildlife Habitat Mitigation and Support Tool (SWHMiST) guideline, in this regard.

The proposed rehabilitation of the shoreline and side slopes surrounding the redevelopment areas will reinstate habitat for both breeding birds and bats in the future. The early succession vegetation regime could attract other SAR birds to the property in the interim.

10.4 Impacts to fisheries by the proposed development are not anticipated once vegetation is reestablished within the near shore environment. The redevelopment will be required to meet the Ontario Building Code (with respect to sewage systems). Any new septic systems will need to be located a sufficient distance away from Gold Lake to attenuate nutrients in the effluent.

The 15 m VPZ is proposed to occur off the highwater mark of Gold Lake with respect to the septic system location, which complies with the minimum under the Ontario Building Code for Sewage Disposal Systems. Provided the vegetation rehabilitation is completed, the septic system should not impact Gold Lake as the new native trees and shrubs would intercept and take-up nutrients in the downgradient path of the disposal system.

Although blasting is not anticipated on-site, if it is necessary as part of the proposed redevelopment, it would be best to complete the blasting outside the MNDMNRF In-water Work Timing Window Guidelines for fish that could be spawning offshore of the subject site. The spring period timing window would be March 15th to July 15th each year for all species that could be spawning directly offshore of the subject site.

Additional recommendations are provided below with respect to sewage disposal and the proposed redevelopment.

10.5 The subject site and surrounding neighbouring parcels possess SWH; the list is provided below and the recommendations (below) should be implemented to mitigate direct and/or indirect impacts to these habitats in adherence to the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST). The majority of the SWHs are associated with Gold Lake and the unevaluated wetland/bedrock valley feature located off-site that drains parallel to the northern property boundary of the subject site.

It should be possible to avoid the off-site SWH related to Gold Lake and the unevaluated wetland feature, which is the primary mitigation measure in the SWHMiST.

The remaining SWH are associated with the former woodland habitat that was once on-site. Considering the majority of the woodland SWH has already been

removed/impacted, the SWHMiST recommendations to either avoid, reduce the development footrprint, etc. cannot be adhered to in this instance.

Therefore, the only way to mitigate the impacts to the on-site woodland SWH is to rehabilitate/reinstate the impacted areas of the property and minimize the overall footprint of the redevelopment. Recommendations to rehabilitate the SWH are provided in the following section.

10.6 Provided the recommendations outlined in this *s*NHE are adhered to, impacts to the KNHFs identified on Figure 7 should be undetectable. Given that all of the areas identified on the subject site that were impacted by the tree removal can be enhanced to have no impact on the KNHFs, the proposed redevelopment could proceed on the property, concurrently with the implementation of the recommended rehabilitation measures identified on Figure 7 and the 15 m VPZ septic system requirement.

11.0 Recommendations

11.1 To offset the woodland habitat loss along the shoreline of the property, ORE staff recommend an intensive rehabilitation be undertaken on the subject site to restore the woodland habitats that were removed (as illustrated on Figure 7), as per Section b) of 4.2.4.5 of the Grown Plan - *restore, to the maximum extent possible, the ecological features and function in developed shoreline areas*. This, in combination with a standard minimum setback, should be sufficient to curtail the habitat loss and improve conditions on-site as they relate to Gold Lake.

Unfortunately, there will be a period whereby the majority of the lake view will be obstructed once the native trees reach a certain age in both the full and partial rehabilitation areas. However, once the trees are sufficiently mature, only the stems will obstruct the view to the lake in the partial rehabilitation area. Unfortunately, this could have been mitigated by implementing a selective cutting and/or tree trimming approach to the former woodland habitat on-site as opposed to clearing all of the trees.

ORE staff recommend implementing a three (3) year monitoring period whereby the property owner will report the success of the regrowth to the Municipality. If during this period a tree dies, it shall be replaced on a “one for one” basis. The hope is that existing seeds in the ground will germinate, and the status of each regeneration tree species would be discussed in the monitoring program. ORE staff prefers the new native seedling regrowth as opposed to planting nursery stock trees as the native regrowth trees/shrubs would have a better chance of succeeding on the property.

The property owner shall report the success of the natural regeneration type rehabilitation during the three (3) year period to determine whether the native seedlings in the areas outside the redevelopment areas are sufficiently succeeding to compensate for

the tree loss. The property owner could not remove any of the regenerating trees unless they become a hazard to any structures.

ORE staff would return to the site at the end of each growing period over a three (3) year period to evaluate which trees should be retained. The retained trees that are to remain would be marked by ORE staff and the property owner could not remove those trees, unless they become a hazard once they mature.

If for some reason, the natural regeneration efforts do not adequately fill the rehabilitation areas by the third inspection year, it may be necessary to plant additional native trees and shrubs to fulfill the rehabilitation requirements on the site.

The regeneration areas should be allowed to mature through the natural selection process as this is the likely the most successful approach compared to landscaping/nursery stock planting efforts.

11.2 A 10 m lake-view corridor can be maintained within the VPZ to allow the property owner vistas of the lake and access to the waterfront. However, some shrubs shall be planted within the corridor as a means of stabilizing the slopes and creating a vegetation buffer with respect to the new septic system (Figure 7). A 2 m wide stone walkway can be constructed to access a dock at the shoreline, considering the steep bedrock slope. However, shoreline hardening measures cannot be installed. The property owner should install a ramp to access the dock system. The property owner should determine whether they require a permit from any agencies prior to installing the 2 m wide walkway to the shoreline and/or inserting the dock system.

The entire property outside the 10 m wide vista window shall be rehabilitated to the fullest extend by allowing the native regrowth to reestablish the vegetation buffer, as per the Growth Plan requirements.

11.3 The proposed development area is illustrated on Figure 7. The property owner shall confine the construction to this PDA. The PDA shall be identified on the Site Plan/Survey by the proponent that adheres to both the proposed 15 VPZ septic setback and rehabilitation areas. Former forest areas shall be subject to the natural regeneration rehabilitation efforts including those areas outside the septic VPZ.

11.4 Considering no Special Concern, Threatened or Endangered SAR were observed directly 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, no recommendations are provided herein.

The former woodland content on the property was likely suitable habitat for a variety of

woodland bird species, some of which may have been SAR avian, as suggested in previous sections. However, if the property owner completes the rehabilitation, it should be possible to reinstate this habitat over time. In the interim, it is possible that certain other SAR that prefer shrubby habitats may find the regrowth/rehabilitation areas suitable habitat.

11.5 The unevaluated wetland/swamp area to the west of the property and the small bedrock spillway associated with this wetland feature are considered KHFs and those areas that have been impacted would be reinstated through the rehabilitation efforts on-site. Figure 7 illustrates the 15 m septic system VPZ constraint that would situate the septic system back from KHF, satisfying the Ontario Building Code requirements. No new development can occur within the rehabilitation areas; only existing buildings and existing uses can be maintained. The property owner shall provide a survey that identifies and demarcates the limit of the rehabilitation areas for future reference.

11.6 Proper erosion/sedimentation controls will be required at all times while heavy equipment is in operation at this site. A single-row of heavy-duty silt fence must be installed to identify the boundaries of the approved redevelopment envelope(s) (i.e., work areas) and to serve as a barrier to prevent construction activities from imposing on the rehabilitation areas and 15 m septic system VPZ.

If eroded materials bypass the silt fence, the materials should be removed manually (without equipment) and reestablished in the construction zone. The heavy-duty silt fence would also serve as an exclusion fence to herptiles and other fauna. The fence (if installed correctly) would prevent species such as turtles and certain snakes from entering the work area during the growing period.

The contractor and/or property owner should determine what types of Erosion Sediment Controls (ESC) are warranted, based on any planned site filling and grading. There are certain ESCs that are interim controls that would be removed once the construction is complete and others which are intended to be permanent controls which are not removed once the construction is complete.

Neither track-mounted nor tire mounted construction equipment should operate during heavy precipitation events. After any such events, the ESCs should be checked to ensure their effectiveness. Ultimately, it is up to the contractor and/or property owner to ensure the effectiveness of the ESC and their Site Plan should account for what controls are required based on the site conditions and final grades on-site.

If filling is necessary, the fill-volume and fill-areas should be illustrated on the Site Plan/Grading Plan. No fill materials shall be placed within the KHFs or their rehabilitation areas/septic VPZ.

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.

To mitigate the potential for construction equipment to introduce non-native/invasive species to the subject site, the contractor shall inspect and clean the equipment prior to and after using the equipment on-site according to the provincial, June 2016 - Clean Equipment Protocol for Industry.

The recommendations above will also prevent impacts to Gold Lake which represents a Significant Fisheries habitat. The development footprint shall be situated in the proposed location on Figure 7 which will not impact Gold Lake and/or the adjacent wetland/bedrock spillway. Provided the rehabilitation areas identified on Figure 7 and the ESC on the Site Plan are implemented, neither KHF will be impacted.

11.7 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.

Considering the majority of the vegetation has already been removed on-site, it should be possible to commence construction of the redevelopment. As per a previous recommendation, no existing trees that are standing shall be removed on-site, unless the tree could potentially cause damage to an existing building or structure. Based on the majority of the woodland being cleared, it is highly unlikely there are any hazard trees remaining on the subject site.

In addition to the breeding/migratory bird window above, if blasting is necessary (although not anticipated), the yearly fish spawning between March 15th to July 15th in the 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 not necessary, then the above-mentioned fish spawning window would not apply.

11.8 The proposed redevelopment has already impacted the woodland SWH on the property and therefore cannot meet the Significant Wildlife Habitat Mitigation Support Tool (SWHMiST) recommendations in its current state.

The following mitigation measures in the table below are recommended to improve conditions on the lot such that no negative impacts can be achieved on the subject site

even with the integration of the proposed redevelopment components on the property:

SWH Present	**SWH Description/Location**	**Mitigation Recommendation**
Amphibian Movement Corridors	Directly adjacent to the subject site within the small bedrock valley that drains the off-site wetland to the west.	• Able to avoid this areas as it is off-site. No construction materials or debris can enter this feature via the subject site. • Retain existing buffer of trees that has not been removed on-site. • If dock is to be inserted be sure a ramp is used to create a gap between the shoreline and dock. This will allow species such as amphibians, etc. to keep to the shore.
Waterfowl Stopover and Staging Areas (Aquatic)	Offshore areas of Gold Lake.	• Rehabilitate the slope upgradient of the shoreline to reinstate a visual buffer between Gold Lake and the proposed development • Link any proposed dock to the shoreline utilizing a ramp. It would allow ducks dabbling in the near-shore environment to keep close to the shore.
Shorebird Migratory Stopover Area	Offshore areas of Gold Lake.	• Rehabilitate the slope upgradient of the shoreline to reinstate a visual buffer between Gold Lake and the proposed development • Link any proposed dock to the shoreline utilizing a ramp. It would allow ducks dabbling in the near-shore environment to keep close to the shore.
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nesting and Foraging trees along the shoreline for raptor species.	• Rehabilitate the slope upgradient of the shoreline to reinstate the woodland area between Gold Lake and the proposed development. • Growing trees in the periphery of the development swath will reinstate the contiguous wooded shoreline for future raptor use.

Amphibian Breeding Habitat (Wetlands)	Breeding habitats associated with wetland to the west of the subject site.	• Retain existing trees along the northern and western edge of the property, nearest these features. • Rehabilitation of woodland habitat on the subject site to buffer the development area from the adjacent wetland habitat.
Marsh Breeding Bird Habitat	Breeding habitats associated with wetland to the west of the subject site. No marsh habitats on-site or along the Gold Lake shoreline.	• Retain existing trees along the northern and western edge of the property, nearest these features. • Rehabilitation of woodland habitat on the subject site to buffer the development area from the adjacent wetland habitat.
Furbearer Movement Corridor	The shorelines on either side of the subject site possess dense woodland habitats and maintain a connective shoreline corridor for furbearers.	• Rehabilitate the slope upgradient of the shoreline to reinstate the woodland area between Gold Lake and the proposed development. • Reconnecting the subject site with the woodlands on the neighbouring properties will reinstate connectivity between properties.

It is anticipated that once the rehabilitation is a success on the property, the SWH will have been reinstated and the overall goal of no adverse impacts to the KNHFs on-site will have been achieved.

In addition to the rehabilitation, the 15 m septic system VPZ off the local KHFs will ensure the septic system will not impact the KHF. The application of the 15 m VPZ will both protect and improve water quality conditions for Gold Lake and subsequently improve/restore conditions for fish and fish habitat in this KHF.

The additional rehabilitation in the areas outside the 15 VPZ, and lateral to the proposed redevelopment areas will also improve lakeside conditions. The goal is to minimize lawn areas to only what is necessary around the redevelopment and nestle the development within the existing natural habitats.

Once the majority of the vegetation on the property is reinstated, the redevelopment will comply with the SWHMiST. No further measures are recommended in regards to protecting/mitigating the SWH on the property.

11.9 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 (i.e., vegetation has taken root), the erosion/sedimentation controls can be removed.

11.10 As part of the application package, the proponent shall provide the authorities with a survey of the proposed redevelopment plans once the limits of the buildings etc., have been determined based on the constraints outlined in this *s*NHE. An Ontario Land Surveyor (OLS) shall provide a survey that includes the limit of the KHFs the rehabilitation area, and the 15 m septic system VPZ on the Site Plan. If the proposed redevelopment is approved by the authorities, the OLS shall return to the site and stake the VPZ, rehabilitation area, lot boundaries and limits of the disturbance areas associated with the proposed buildings/structures within the subject lot, so the authorities can review them on-site. The property owner and/or their contractor must install the heavy-duty silt fence along the rehabilitation limit prior to any work on the parcel.

* end of *s*NHE *

Yours truly,
Oakridge Environmental Limited

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 Stoney Lake Cottagers Association website

Gill F.B. 2007. *"Ornithology - Third Edition".* National Audobon 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 Damselfies 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., "Nerwcomb'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 5E*"; Regional Operations Division, Peterborough, Ontario.

Ontario Ministry of Natural Resources and Forestry. 2014. "*Significant Wildlife Habitat Mitigation Support Tool*"; Peterborough, Ontario.

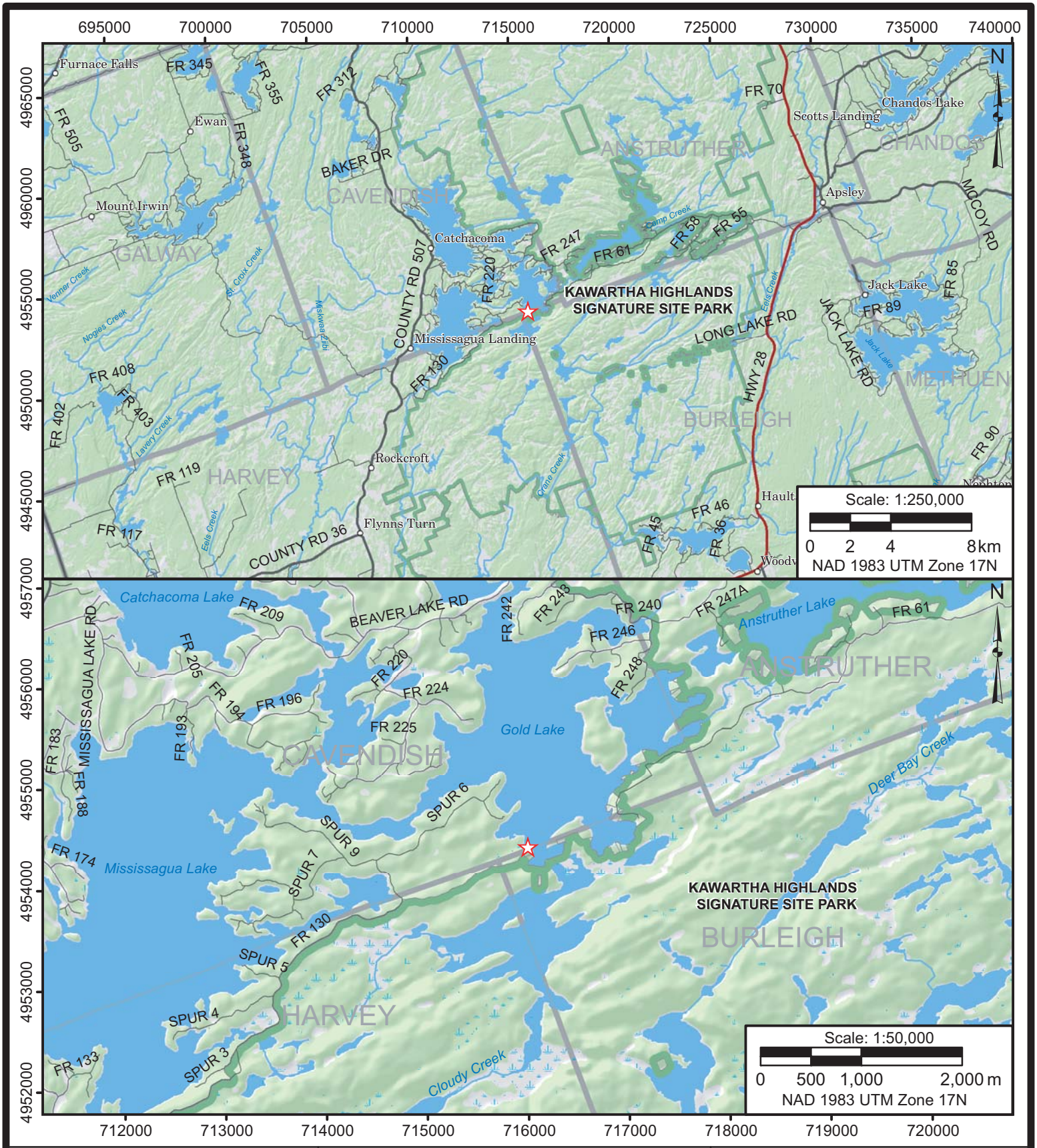
Peck G.K. & James R.D. 1983, "*Breeding Birds of Ontario Nidiology and Distribution Volume 1 : Nonpasserines and Volume 2: Passerines".* Royal Ontario Museum, Toronto.

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



☆ Approximate Site Location

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2022)

Optimized for Oakridge Environmental Ltd. printing

***Scoped* Natural Heritage Evaluation (sNHE)**
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

North American Datum (NAD) 1983

TITLE
General Location

PROJECT # 22-3191

DATE February 2023

FIGURE NO. **1**

***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

- Approximate Property Boundary
- Wooded Area
- Waterbody
- Wetland (Unevaluated)
- Watercourse
- Contour (5m Intervals)
- Spot Height (m asl)
- Building (symbol)
- Road
- Aggregate Site
- Provincial Park
- Geographic Lot Fabric

Scale: 1:10,000

0 100 200 400 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2022)

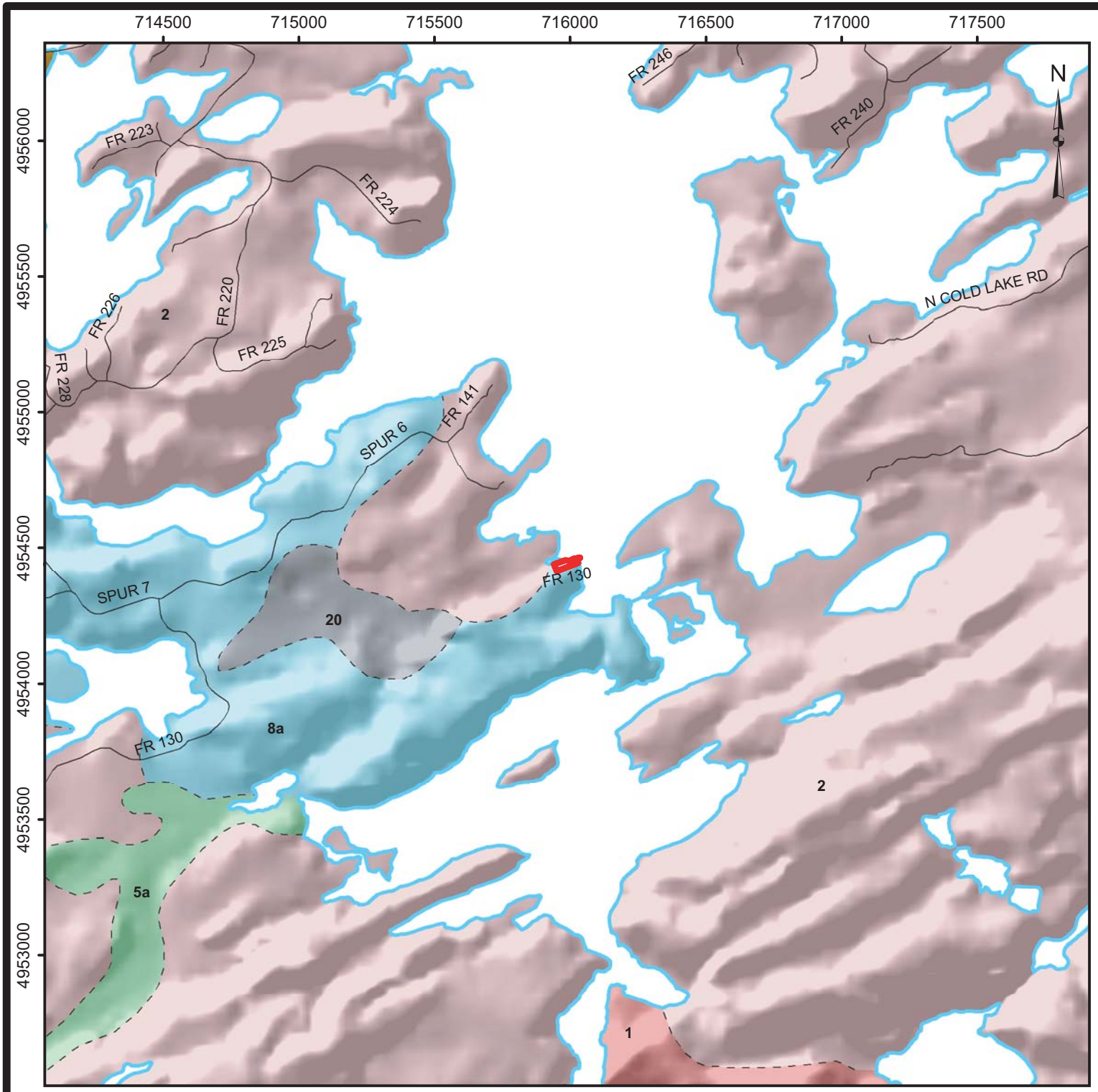
Optimized for Oakridge Environmental Ltd. printing

TITLE

Topography and Drainage

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
22-3191	**2**
DATE: February 2023	



NAD 1983 UTM Zone 17N

***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

- Approximate Property Boundary
- Lake
- Contact (approximate/assumed)
- 1 — Precambrian bedrock
- 2 — Precambrian bedrock-drift complex
- 5a — Glacial Deposits (Till): Shield-derived silty to sandy till
- 6a — Ice-contact stratified deposits: In moraines, kames, eskers and crevasse fills
- 8a — Fine-textured glaciolacustrine deposits: Massive-well laminated
- 20 — Organic deposits

Scale: 1:20,000

0 200 400 800 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2022)

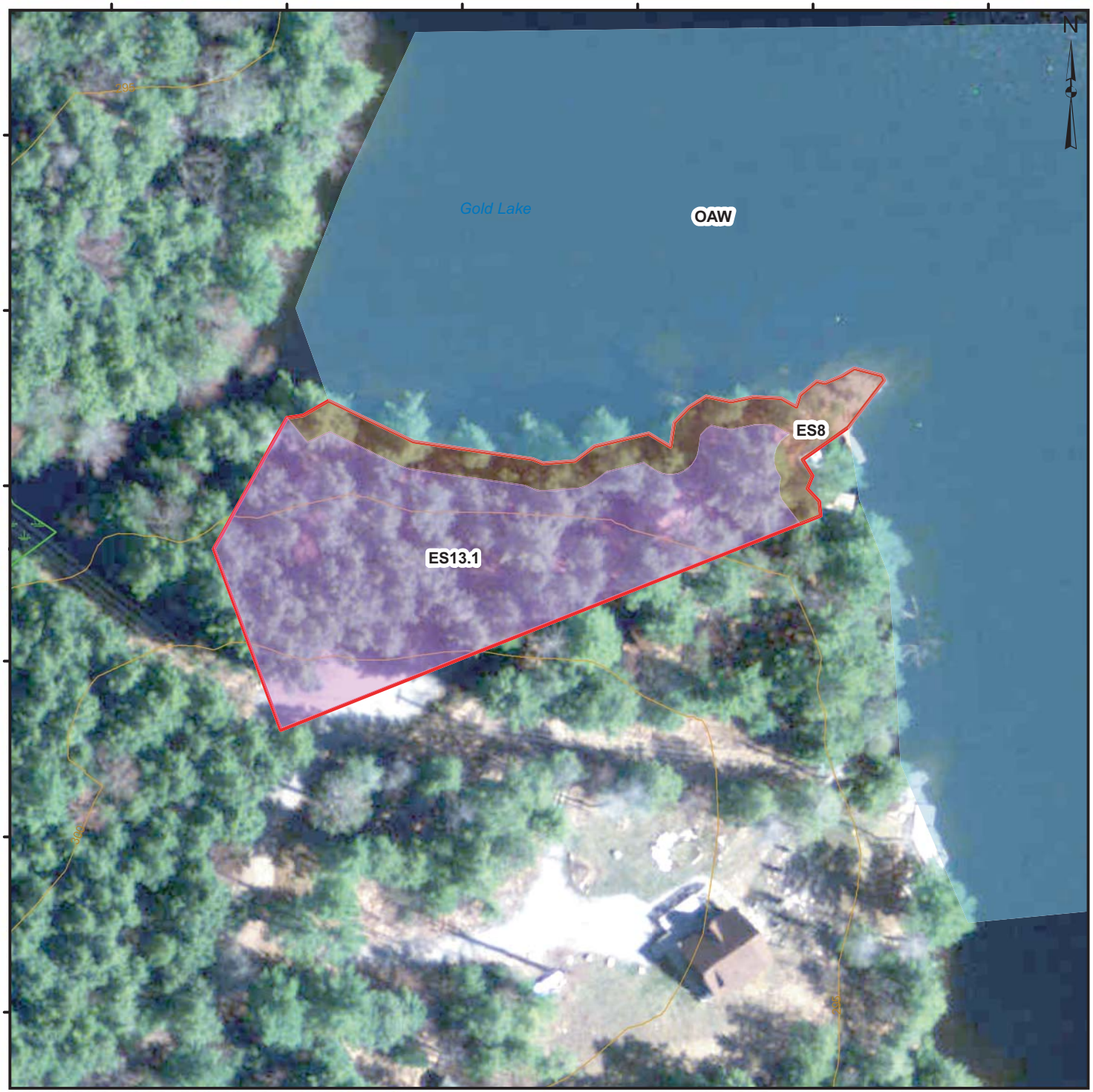
Optimized for Oakridge Environmental Ltd. printing

TITLE

Surficial Geology

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
22-3191	**3**
DATE: February 2023	



NAD 1983 UTM Zone 17N

Scoped Natural Heritage Evaluation (_s_NHE)
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

- Approximate Property Boundary
- Formerly Jack Pine-White Pine-Red Pine (ES13.1)
- Open Water (OAW)
- Rock Barren - Acidic/ circumneutral (ES8)
- Wetland (Unevaluated)
- Contour (5 m Intervals)

Scale: 1:800

0 5 10 20 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2022)

Imagery provided by Ontario Imagery Program (2013)

Optimized for Oakridge Environmental Ltd. printing

TITLE

Vegetation

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
22-3191	4
DATE	
February 2023	

Photo A (Above): was taken looking north towards Gold Lake from the existing roadway proximal to existing trailer that is on-site.

Photo B (Above): was taken looking northwest towards the bedrock dominated drainage course that drains the unevaluated wetland located west of the property. In the forefront is the wooded slope area upgradient of the drainage course.

Photo C (Above): was taken looking northwest area overlooking the shoreline of Gold Lake.

Photo D (Above): was taken looking northeast towards the shoreline of Gold Lake. The existing small cottage occurs in the upper right corner of the photo.

	***Scoped* Natural Heritage Evaluation (*s*NHE)** **Proposed Residential Redevelopment** 401 Fire Route 130, Gold Lake Part of Lots 26 & 27, Concession 1 (Cavendish) Municipality of Trent Lakes, County of Peterborough	TITLE **Site Photos**
Photos Taken: October 14, 2022	ORE Oakridge Environmental Ltd. Environmental and Hydrogeological Services	PROJECT # 22-3191 DATE February 2023 FIGURE NO. **5**
Optimized for Oakridge Environmental Ltd. printing		

Photo A (Above): was taken within the bedrock dominated channel, looking up the wooded slope on the subject property.

Photo B (Above): was taken looking west along the shoreline. There is no vegetation along the shoreline suggesting this area is a high energy wave action shore. The water in the lake had receded and would typically be up the bedrock slope.

Photo C (Above): was taken looking north within the bedrock dominated drainage feature towards Gold Lake in the background. ORE staff presumes this would be flowing during the spring freshet.

Photo D (Above): was taken in the area of the existing cottage where the trees/woodland is still intact. ORE staff presumes the area to the west appeared similar to the setting in this photo.

***Scoped* Natural Heritage Evaluation (*s*NHE)**
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

TITLE
Site Photos

Photos Taken: October 14, 2022

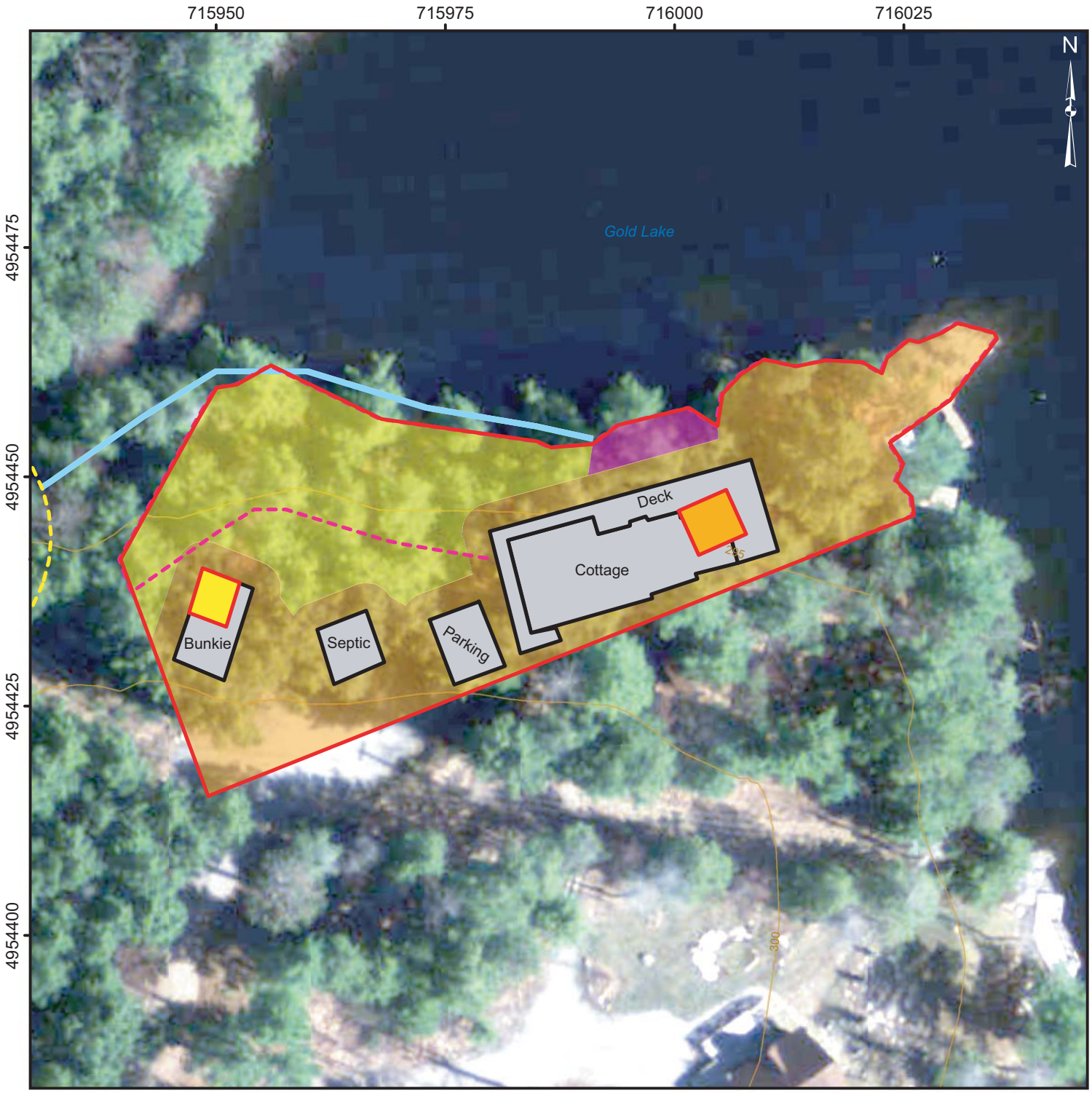
ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 22-3191

FIGURE NO. **6**

DATE February 2023

Optimized for Oakridge Environmental Ltd. printing



Scoped Natural Heritage Evaluation (_s_NHE)
Proposed Residential Redevelopment
401 Fire Route 130, Gold Lake
Part of Lots 26 & 27, Concession 1 (Cavendish)
Municipality of Trent Lakes,
County of Peterborough

- Approximate Property Boundary
- Proposed Footprint
- Existing Cottage
- Existing Bunkie
- Full Rehab Area
- Partial Rehab Area
- Proposed Development Area
- Waterbody Shoreline (LIO)
- Wetland Setback/VPZ (15 m)
- Waterbody Setback (15 m for Septic)
- Contour (5 m Intervals)

Scale: 1:600

0 5 10 20 m

Notes: Base maps provided by Land Information Ontario and Natural Resources Canada (2022)

Imagery provided by Ontario Imagery Program (2013)

Property boundary and proposed/existing footprints provided by Livings (April 2022)

Optimized for Oakridge Environmental Ltd. printing

TITLE

Constraints

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
22-3191	7
DATE	
February 2023	

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 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

Ontario

Ministry of Natural Resources and Forestry

Make-a-Map: Natural Heritage Areas

NHIC Map

Map created:10/19/2022

Legend

- Assessment Parcel
- NHIC 1 Km Grid
- ANSI
- Earth Science Provincially Significant/sciences de la terre d'importance provinciale
- Earth Science Regionally Significant/sciences de la terre d'importance régionale
- Life Science Provincially Significant/sciences de la vie d'importance provinciale
- Life Science Regionally Significant/sciences de la vie d'importance régionale
- Evaluated Wetland
- Provincially Significant/considérée d'importance provinciale
- Non-Provincially Significant/non considérée d'importance provinciale
- Unevaluated Wetland
- Conservation Reserve
- Provincial Park
- Natural Heritage System

0.7 0 0.33 0.7 Kilometres

Absence of a feature in the map does not mean they do not exist in this area.

This map should not be relied on as a precise indicator of routes or locations, nor as a guide to navigation. The Ontario Ministry of Natural Resources and Forestry(OMNRF) shall not be liable in any way for the use of, or reliance upon, this map or any information on this map.

NHIC Data

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

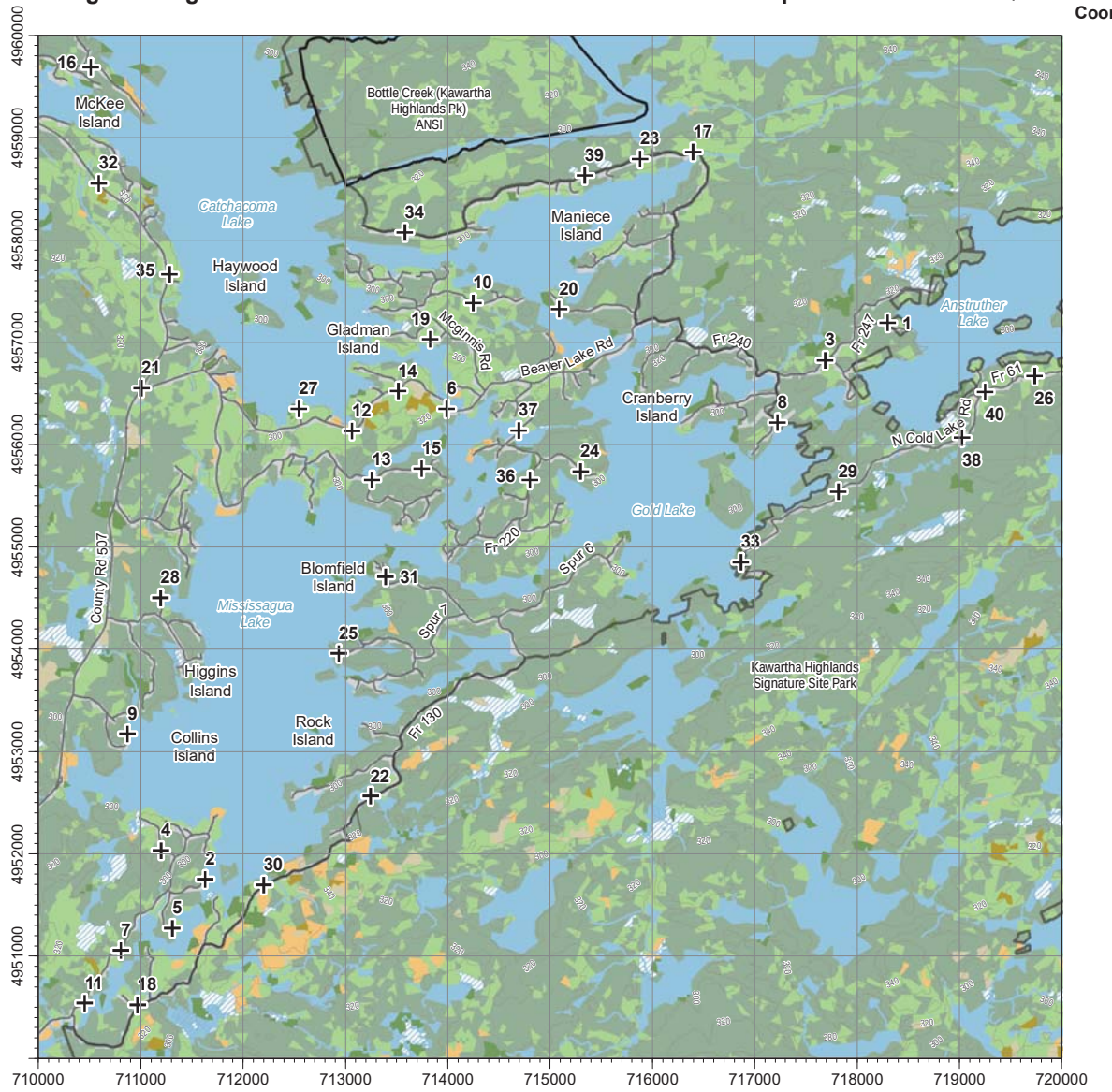
OGF ID	Element Type	Common Name	Scientific Name	SRank	SARO Status	COSEWIC Status	ATLAS NAD83 IDENT	COMMENTS
1059388	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			17QK1554	
1059388	NATURAL AREA	KAWARTHA HIGHLANDS SIGNATURE SITE PARK (NATURAL ENVIRONMENT CLASS)					17QK1554	
1059398	WILDLIFE CONCENTRATION AREA	Colonial Waterbird Nesting Area		SNR			17QK1654	
1059398	NATURAL AREA	KAWARTHA HIGHLANDS SIGNATURE SITE PARK (NATURAL ENVIRONMENT CLASS)					17QK1654	
1059398	SPECIES	Mottled Darner	Aeshna clepsydra				17QK1654	

Appendix D

OBBA Database

Region / Région: 16

Square / Parcelle: 17TQK15



Predefined point count coordinates
Coordonnées des points d'écoute prédéterminés

POINT +	EASTING UTM Est	NORTHING UTM Nord
1	718302	4957193
2	711631	4951749
3	717688	4956824
4	711200	4952029
5	711308	4951270
6	713989	4956349
7	710808	4951056
8	717225	4956216
9	710870	4953173
10	714247	4957387
11	710453	4950538
12	713064	4956133
13	713259	4955655
14	713518	4956523
15	713746	4955767
16	710513	4959691
17	716398	4958863
18	710967	4950522
19	713831	4957033
20	715089	4957326
21	711005	4956553
22	713243	4952562
23	715879	4958793
24	715298	4955738
25	712938	4953960
26	719734	4956671
27	712544	4956351
28	711191	4954501
29	717819	4955541
30	712201	4951695
31	713391	4954710
32	710589	4958553
33	716863	4954851
34	713579	4958074
35	711280	4957665
36	714805	4955655
37	714692	4956139
38	719028	4956069
39	715340	4958633
40	719253	4956514

Number of off-road point counts
Nombre de points d'écoute hors route

Broadleaf forest:	1	Grassland:	0
Coniferous forest:	0	Wetland:	0
Mixed forest:	4	Shrubland:	0

Predefined / Prédéterminés: 20
Off-road / Hors route: 5

Atlas-2 off-road point ● **Point hors route Atlas-2**

0 1 km

Atlas des oiseaux nicheurs Ontario Breeding Bird Atlas

Legend	Légende
Expressway or highway	Autoroute ou route nationale (asphaltée)
Regional or local road	Route régionale ou locale (asphaltée ou non)
Resource / Recreation	Ressource / route récréative
Rail line	Chemin de fer
Utility corridor	Ligne de transport d'énergie
Watercourse	Rivière ou ruisseau
Protected or conserved area	Zone protégée ou conservée
Fire disturbance since 2000	Incendie perturbé depuis 2000
Broadleaf forest 16	Forêt de feuillus
Coniferous forest 2	Forêt de conifères
Mixed forest 47	Forêt mixte
Shrubland 1	Milieu arbustif
Grassland	Prairie
Barren	Dénudé
Wetland 2	Milieu humide
Agriculture	Milieu agricole
Water 28	Eau
Developed area 4	Zone développée
Unclassified	Non classifié

The approximate percent coverage of each habitat type is indicated by the numbered box in the legend.

La couverture approximative est indiquée en pourcentage dans le rectangle coloré de la légende.

Cartographic production by Birds Canada
Production cartographique par oiseaux Canada

Note: The project partners are in no way responsible for any inaccuracies, mistakes or omissions in the information that appears on this map.

Avis : Les responsables du projet d'atlas ne peuvent être tenus responsables de toute inexactitude, erreur ou omission concernant les informations apparaissant sur cette carte.

6° Universal Transverse Mercator (UTM) Projection; Zone 17, Central Meridian -81°; North American Datum 1983 (NAD 83)

Projection universelle transverse de Mercator (UTM) 6° Zone 17, méridien central -81°; Système de référence géodésique nord-américain 1983 (NAD 83)

BIRDS CANADA OISEAUX CANADA

March 2021 / mars 2021

https://www.birdsontario.org/

17TQK15

Peterborough

Region / Région: 16

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TQK15) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	36	27	12	75	32.7	24.9	20	0
Prev.	35	24	36	95	64.7	—	25	

Region summary (#16: Peterborough, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
60	60	162	60	24
60	60	185	0	60

Target number of point counts in this square: 25 in total: 20 road side, 5 off road (Broadleaf Forest in 1, Mixed Forest in 4). Please try to ensure that each off-road station is located such that the entire 100m radius circle is within the prescribed habitat. **Predef. completed:** [01, 02, 03, 04, 05, 06, 07, 08, 09, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21]

SPECIES	Prev.	Code	%
Canada Goose	AE	P	78
Mute Swan ‡			3
Trumpeter Swan			20
Wood Duck	FY	H	78
Blue-winged Teal ‡			8
Northern Shoveler ‡			0
Gadwall ‡			0
American Wigeon ‡			0
Mallard	FY	NY	78
American Black Duck			5
Northern Pintail ‡			0
Green-winged Teal ‡			0
Redhead †			0
Ring-necked Duck			20
Lesser Scaup ‡			0
Hooded Merganser	FY		56
Common Merganser ‡	P		20
Ruddy Duck ‡			0
Wild Turkey		FY	88
Ruffed Grouse	S	S	85
Ring-necked Pheasant ‡			0
Pied-billed Grebe	S		21
Rock Pigeon (Feral Pigeon)			50
Mourning Dove	S	S	81
Yellow-billed Cuckoo		H	50
Black-billed Cuckoo			66
Common Nighthawk §			21
Eastern Whip-poor-will §	S	S	33
Chimney Swift ‡			6
Ruby-throated Hummingbird	FY	P	70
Virginia Rail			55
Sora			18
Common Gallinule ‡			10

SPECIES	Prev.	Code	%
American Coot ‡			1
Sandhill Crane ‡			23
Killdeer §			51
Upland Sandpiper †			8
American Woodcock			45
Wilson's Snipe	S		48
Spotted Sandpiper	H	H	46
Ring-billed Gull § ‡			1
Herring Gull §	NE	FY	25
Caspian Tern ‡			0
Black Tern †			1
Common Tern § ‡			0
Common Loon	FY	P	71
Double-crested Cormorant § ‡			3
American Bittern	S		66
Least Bittern †			21
Great Blue Heron §	H		61
Green Heron §			45
Turkey Vulture	H	T	88
Osprey	H	H	48
Northern Harrier			26
Sharp-shinned Hawk	H		21
Cooper's Hawk			20
Northern Goshawk ‡			1
Bald Eagle ‡			5
Red-shouldered Hawk		T	30
Broad-winged Hawk	D	CF	78
Red-tailed Hawk	H		48
Eastern Screech-Owl			10
Great Horned Owl ‡	P		13
Barred Owl	P	S	40
Long-eared Owl ‡			3
Short-eared Owl †			0

SPECIES	Prev.	Code	%
Northern Saw-whet Owl			3
Belted Kingfisher	D	H	86
Yellow-bellied Sapsucker	A	D	96
Red-headed Woodpecker †			8
Red-bellied Woodpecker			36
Black-backed Woodpecker ‡	H		1
Downy Woodpecker	S	S	83
Hairy Woodpecker	FY	T	91
Pileated Woodpecker	S	N	90
Northern Flicker	S	D	91
American Kestrel §			48
Merlin			43
Peregrine Falcon ‡			0
Olive-sided Flycatcher ‡			6
Eastern Wood-Pewee §	T	T	100
Yellow-bellied Flycatcher ‡			0
Alder Flycatcher	S	S	91
Willow Flycatcher			35
Least Flycatcher	S	S	91
Eastern Phoebe	T	T	100
Great Crested Flycatcher	S	A	100
Eastern Kingbird	P	H	90
Yellow-throated Vireo	S		31
Blue-headed Vireo	A	T	75
Philadelphia Vireo ‡			0
Warbling Vireo			75
Red-eyed Vireo	CF	A	100
Loggerhead Shrike †			0
Canada Jay ‡			0
Blue Jay	FY	S	100
American Crow	P	CF	95
Common Raven	NY	H	91
Black-capped Chickadee	FY	FY	98

Breeding Bird Atlas - Summary Sheet for Square 17TQK15 (page 2 of 2)

SPECIES	Prev.	Code	%
Boreal Chickadee ‡			0
Horned Lark ‡			5
Northern Rough-winged Swallow			20
Purple Martin ‡			0
Tree Swallow	AE	H	81
Bank Swallow §			11
Barn Swallow §	NY		73
Cliff Swallow §			16
Ruby-crowned Kinglet ‡			0
Golden-crowned Kinglet	CF		28
Red-breasted Nuthatch	NY	CF	93
White-breasted Nuthatch	FY	T	88
Brown Creeper	S	S	71
Blue-gray Gnatcatcher ‡			3
House Wren			76
Winter Wren	FY	T	96
Sedge Wren ‡			8
Marsh Wren	S		46
Carolina Wren ‡			5
European Starling			80
Gray Catbird	S	S	80
Brown Thrasher			75
Northern Mockingbird ‡			1
Eastern Bluebird	P		53
Veery	T	T	100
Swainson's Thrush	T	S	15
Hermit Thrush	T	T	75
Wood Thrush §	S	S	86
American Robin	FY	NB	98
Cedar Waxwing	P	H	88
House Sparrow			35
Evening Grosbeak ‡	H		0
House Finch			16

SPECIES	Prev.	Code	%
Purple Finch	P	T	96
Red Crossbill ‡	H		5
White-winged Crossbill ‡	FY		3
Pine Siskin ‡	H	S	10
American Goldfinch	P	S	93
Grasshopper Sparrow §			21
Chipping Sparrow	FY	T	95
Clay-colored Sparrow ‡			15
Field Sparrow §			61
Dark-eyed Junco ‡	FY	S	3
White-throated Sparrow	FY	A	96
Vesper Sparrow			28
Savannah Sparrow			58
Song Sparrow	CF	CF	100
Lincoln's Sparrow ‡	S		5
Swamp Sparrow	FY	CF	100
Eastern Towhee §	S		48
Bobolink §			50
Eastern Meadowlark §			56
Orchard Oriole ‡			3
Baltimore Oriole	S		75
Red-winged Blackbird	P	CF	100
Brown-headed Cowbird	H		61
Common Grackle	FY	H	98
Ovenbird	CF	T	98
Northern Waterthrush	T	S	91
Golden-winged Warbler †			13
Blue-winged Warbler ‡			10
Black-and-white Warbler	T	S	96
Tennessee Warbler ‡			0
Nashville Warbler	FY	S	90
Mourning Warbler	S		70
Common Yellowthroat	CF	A	100

SPECIES	Prev.	Code	%
Hooded Warbler ‡			0
American Redstart	FY	S	96
Cape May Warbler ‡			0
Cerulean Warbler †			3
Northern Parula ‡	S		10
Magnolia Warbler	T	S	70
Bay-breasted Warbler ‡			0
Blackburnian Warbler	CF	T	65
Yellow Warbler	S	S	85
Chestnut-sided Warbler	CF	S	93
Black-throated Blue Warbler	T	AE	58
Pine Warbler	CF	S	91
Yellow-rumped Warbler	CF	T	83
Prairie Warbler †			0
Black-throated Green Warbler	CF	T	93
Canada Warbler §	T	S	61
Scarlet Tanager	CF	T	95
Northern Cardinal			50
Rose-breasted Grosbeak	S	H	98
Indigo Bunting		S	95

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 (17TQK15). 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 17TQK15 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQK15 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: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://naturecounts.ca//nc//atlas/summaryform.jsp?squareID=17TQK15&lang=EN Data current as of **18/10/2022 22:41**.

Appendix E

Species Descriptions

Birds

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.

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.

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.

Evening Grosbeak (*Coccothraustes vespertinus*) is listed as "Special Concern" by SARO and is not protected under the ESA. During the breeding season, Evening Grosbeak is generally found in open, mature mixed-wood forests dominated by fir species, White Spruce and/or Trembling Aspen. Its abundance is strongly linked to the cycle of its primary prey, the Spruce Budworm. Outside the breeding season, the species depends mostly on seed crops.

Golden-winged Warbler (*Vermivora chrysoptera*) is listed as "Special Concern" by SARO and is not protected under the ESA. The Golden-winged Warbler prefers woodland edge habitat with young successional tree species and moist shrubby fields. This species gleans insects on shrubs and the forest floor and nesting occurs on the ground.

Olive-sided Flylcatcher (*Contopus cooperi*) is listed as "Special Concern" by SARO and is not protected under the ESA. This species is typically found within natural forest edges and openings. Its preferred habitat is within coniferous or mixed forests adjacent to rivers or wetlands. It likes to inhabit conifers such as White/Black Spruce, Jack Pine, and Balsam Fir.

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.

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.

Appendix F

eBird Database

Change location | Year-round, All years

Beaver Lake Road

Peterborough County (/region/CA-ON-PB?yr=all&m=),
Ontario (/region/CA-ON?yr=all&m=),
CA (/region/CA?yr=all&m=)

Map(/hotspots?hs=L2193859&yr=all&m=)

Directions(https://www.google.com/maps/search/?api=1&query=44.7305768,-78.2923615)

Hotspot navigation

Overview (/hotspot/L2193859?yr=all&m=)

Illustrated Checklist (/hotspot/L2193859/media?yr=all&m=)

VIEW MY...

My eBird (/myebird/L2193859)

Life List (/lifelist/L2193859)

Target Species (/targets?r1=L2193859&bmo=1&emo=12)

Checklists (/mychecklists/L2193859)

EXPLORE...

Hotspot Map (/hotspots?hs=L2193859&yr=all&m=)

Bar Charts (/barchart?r=L2193859&yr=all&m=)

Media (https://ebird.org/media/catalog?regionCode=L2193859)

Printable Checklist (/printableList?regionCode=L2193859&yr=all&m=)

101
Species observed
(/hotspot/L2193859?yr=all&m=)

32
Complete checklists
(/hotspot/L2193859/activity?yr=all&m=)

Sightings

Updated 7 sec ago.

1.	**Mallard**	4	4 Jul 2022	Lucia MacQuarrie
2.	**Common Merganser**	1	4 Jul 2022	Lucia MacQuarrie
3.	**Mourning Dove**	2	4 Jul 2022	Lucia MacQuarrie
4.	**Ring-billed Gull**	2	4 Jul 2022	Lucia MacQuarrie
5.	**Common Loon**	1	4 Jul 2022	Lucia MacQuarrie
6.	**Great Blue Heron**	1	4 Jul 2022	Lucia MacQuarrie
7.	**Turkey Vulture**	13	4 Jul 2022	Lucia MacQuarrie
8.	**Great Crested Flycatcher**	3	4 Jul 2022	Lucia MacQuarrie
9.	**Red-eyed Vireo**	3	4 Jul 2022	Lucia MacQuarrie
10.	**Blue Jay**	6	4 Jul 2022	Lucia MacQuarrie
11.	**American Crow**	4	4 Jul 2022	Lucia MacQuarrie
12.	**Black-capped Chickadee**	3	4 Jul 2022	Lucia MacQuarrie
13.	**White-breasted Nuthatch**	2	4 Jul 2022	Lucia MacQuarrie
14.	**American Robin**	3	4 Jul 2022	Lucia MacQuarrie
15.	**Purple Finch**	2	4 Jul 2022	Lucia MacQuarrie
16.	**American Goldfinch**	4	4 Jul 2022	Lucia MacQuarrie
17.	**Chipping Sparrow**	1	4 Jul 2022	Lucia MacQuarrie
18.	**Song Sparrow**	2	4 Jul 2022	Lucia MacQuarrie
19.	**Red-winged Blackbird**	1	4 Jul 2022	Lucia MacQuarrie
20.	**Common Grackle**	4	4 Jul 2022	Lucia MacQuarrie
21.	**Northern Cardinal**	2	4 Jul 2022	Lucia MacQuarrie
22.	**Rose-breasted Grosbeak**	2	4 Jul 2022	Lucia MacQuarrie
23.	**Common Redpoll**	50	23 Jan 2022	Tim Haan
24.	**Pine Siskin**	50	23 Jan 2022	Tim Haan
25.	**American Tree Sparrow**	2	23 Jan 2022	Tim Haan

26.	**Dark-eyed Junco**	10	23 Jan 2022	Tim Haan
27.	**Evening Grosbeak**	4	9 Apr 2021	Wendy Hogan
28.	**Ruffed Grouse**	3	24 May 2020	David Britton
29.	**Herring Gull**	1	24 May 2020	David Britton
30.	**Barred Owl**	1	24 May 2020	David Britton
31.	**Belted Kingfisher**	1	24 May 2020	David Britton
32.	**Yellow-bellied Sapsucker**	4	24 May 2020	David Britton
33.	**Downy Woodpecker**	1	24 May 2020	David Britton
34.	**Hairy Woodpecker**	1	24 May 2020	David Britton
35.	**Northern Flicker**	3	24 May 2020	David Britton
36.	**Merlin**	1	24 May 2020	David Britton
37.	**Eastern Wood-Pewee**	2	24 May 2020	David Britton
38.	**Alder Flycatcher**	1	24 May 2020	David Britton
39.	**Least Flycatcher**	3	24 May 2020	David Britton
40.	**Eastern Phoebe**	5	24 May 2020	David Britton
41.	**Blue-headed Vireo**	1	24 May 2020	David Britton
42.	**Common Raven**	2	24 May 2020	David Britton
43.	**Red-breasted Nuthatch**	7	24 May 2020	David Britton
44.	**Winter Wren**	6	24 May 2020	David Britton
45.	**Veery**	14	24 May 2020	David Britton
46.	**Hermit Thrush**	5	24 May 2020	David Britton
47.	**White-throated Sparrow**	4	24 May 2020	David Britton
48.	**Swamp Sparrow**	4	24 May 2020	David Britton
49.	**Ovenbird**	12	24 May 2020	David Britton
50.	**Northern Waterthrush**	12	24 May 2020	David Britton

51.	**Black-and-white Warbler**	7	24 May 2020	David Britton
52.	**Tennessee Warbler**	2	24 May 2020	David Britton
53.	**Nashville Warbler**	2	24 May 2020	David Britton
54.	**Common Yellowthroat**	7	24 May 2020	David Britton
55.	**American Redstart**	1	24 May 2020	David Britton
56.	**Magnolia Warbler**	1	24 May 2020	David Britton
57.	**Blackburnian Warbler**	5	24 May 2020	David Britton
58.	**Yellow Warbler**	1	24 May 2020	David Britton
59.	**Chestnut-sided Warbler**	8	24 May 2020	David Britton
60.	**Black-throated Blue Warbler**	7	24 May 2020	David Britton
61.	**Pine Warbler**	3	24 May 2020	David Britton
62.	**Yellow-rumped Warbler**	1	24 May 2020	David Britton
63.	**Black-throated Green Warbler**	13	24 May 2020	David Britton
64.	**Canada Warbler**	2	24 May 2020	David Britton
65.	**Scarlet Tanager**	1	24 May 2020	David Britton
66.	**Broad-winged Hawk**	1	3 May 2020	David Britton
67.	**Brown Creeper**	1	3 May 2020	David Britton
68.	**Pileated Woodpecker**	1	15 Oct 2019	Geoff Holroyd
69.	**House Wren**	1	27 Jul 2019	Matthew Tobey
70.	**European Starling** *	2	27 Jul 2019	Matthew Tobey
71.	**Cedar Waxwing**	1	27 Jul 2019	Matthew Tobey
72.	**Olive-sided Flycatcher**	1	26 May 2019	Donald A. Sutherland
73.	**Golden-crowned Kinglet**	1	26 May 2019	Donald A. Sutherland
74.	**Eastern Towhee**	1	26 May 2019	Donald A. Sutherland
75.	**Golden-winged Warbler**	1	26 May 2019	Donald A. Sutherland

76.	**Canada Goose**	2	12 Mar 2018	Wendy Hogan
77.	**Wood Duck**	2	19 Aug 2017	Donald A. Sutherland
78.	**Eastern Kingbird**	1	19 Aug 2017	Donald A. Sutherland
79.	**Gray Catbird**	1	19 Aug 2017	Donald A. Sutherland
80.	**Red Crossbill**	6	19 Aug 2017	Donald A. Sutherland
81.	**Indigo Bunting**	1	19 Aug 2017	Donald A. Sutherland
82.	**Hooded Merganser**	1	19 May 2016	Mike V.A. Burrell
83.	**Wild Turkey**	1	19 May 2016	Mike V.A. Burrell
84.	**American Bittern**	1	19 May 2016	Mike V.A. Burrell
85.	**Ruby-throated Hummingbird**	1	19 May 2016	Donald A. Sutherland
86.	**Wilson's Snipe**	1	19 May 2016	Donald A. Sutherland
87.	**Spotted Sandpiper**	2	19 May 2016	Donald A. Sutherland
88.	**Red-tailed Hawk**	1	19 May 2016	Donald A. Sutherland
89.	**Warbling Vireo**	1	19 May 2016	Donald A. Sutherland
90.	**Tree Swallow**	2	19 May 2016	Donald A. Sutherland
91.	**Barn Swallow**	2	19 May 2016	Donald A. Sutherland
92.	**Wood Thrush**	3	19 May 2016	Donald A. Sutherland
93.	**White-crowned Sparrow**	2	19 May 2016	Donald A. Sutherland
94.	**Baltimore Oriole**	5	19 May 2016	Donald A. Sutherland
95.	**Brown-headed Cowbird**	1	19 May 2016	Donald A. Sutherland
96.	**Cape May Warbler**	1	19 May 2016	Donald A. Sutherland
97.	**Northern Parula**	2	19 May 2016	Donald A. Sutherland
98.	**Bufflehead**	3	12 Apr 2015	Wendy Hogan
99.	**Sharp-shinned Hawk**	1	5 Jun 2013	Travis Cameron
100.	**Swainson's Thrush**	3	23 May 2013	Donald A. Sutherland
101.	**Blackpoll Warbler**	1	23 May 2013	Donald A. Sutherland

Appendix G

Species List

Observed Species List

KINGDOM	Common Name	Scientific Name	SARO	SARA
Animalia				
	Barrow's Goldeneye	Bucephala islandica		
	Black-capped Chickadee	Poecile atricapillus		
	Blue Jay	Cyanocitta cristata		
	Common Merganser	Mergus merganser		
	Eastern Chipmunk	Tamias striatus		
	Eastern Elliptio	Elliptio complanata		
	Mourning Dove	Zenaida macroura		
	Northern Cardinal	Cardinalis cardinalis		
	Northern Flicker	Colaptes auratus		
	Northern Raccoon	Procyon lotor		
	Northern Waterthrush	Parkesia noveboracensis		
	Wetland Giant Wolf Spider	Tigrosa helluo		
	White-crowned Sparrow	Zonotrichia leucophrys		
	White-footed Mouse	Peromyscus leucopus		
	White-tailed Deer	Odocoileus virginianus		
	White-throated Sparrow	Zonotrichia albicollis		
	Yellow Perch	Perca flavescens		
Fungi				
	Bristly Beard Lichen	Usnea hirta		
	Reindeer Lichen	Cladonia arbuscula		
	Rock Greenshield Lichen	Flavoparmelia baltimorensis		
	Shingled Rock-shield Lichen	Xanthoparmelia viriduloumbrina		
	Star Firedot Lichen	Polycauliona stellata		
	Tree Pelt Lichen	Peltigera collina		
Plantae				

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Alder-leaved Buckthorn	Endotropis alnifolia		
	American Beech	Fagus grandifolia		
	Balsam Fir	Abies balsamea		
	Balsam Poplar	Populus balsamifera		
	Black Cherry	Prunus serotina		
	Black Raspberry	Rubus occidentalis		
	Black Spruce	Picea mariana		
	Blue-stemmed Goldenrod	Solidago caesia		
	Bracken Fern	Pteridium aquilinum		
	Broad-leaved Cattail	Typha latifolia		
	Calico Aster	Symphyotrichum lateriflorum		
	Canada Goldenrod	Solidago canadensis var. canadensis		
	Coltsfoot	Tussilago farfara		
	Common Beard Moss	Schistidium apocarpum		
	Common Bugloss	Anchusa officinalis		
	Common Mullein	Verbascum thapsus		
	Common Timothy	Phleum pratense		
	Drooping Woodland Sedge	Carex arctata		
	Dwarf Raspberry	Rubus pubescens		
	Eastern Hemlock	Tsuga canadensis		
	Eastern Hop-hornbeam	Ostrya virginiana		
	Eastern Panicled Aster	Symphyotrichum lanceolatum ssp. lanceolatum		
	Eastern White Cedar	Thuja occidentalis		
	Eastern White Pine	Pinus strobus		
	English Plantain	Plantago lanceolata		
	Flat-top White Aster	Doellingeria umbellata		
	Harlequin Blue Flag	Iris versicolor		
	Large-leaved Aster	Eurybia macrophylla		
	Marginal Wood Fern	Dryopteris marginalis		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Mountain Maple	Acer spicatum		
	Narrow-leaved Small Pondweed	Potamogeton berchtoldii		
	New England Aster	Symphyotrichum novae-angliae		
	Northern Dewberry	Rubus flagellaris		
	Northern Red Oak	Quercus rubra		
	Northern Starflower	Lysimachia borealis		
	Old Switch Panicgrass	Panicum virgatum		
	Ostrich Fern	Matteuccia struthiopteris		
	Philadelphia Panicgrass	Panicum philadelphicum		
	Poverty Oatgrass	Danthonia spicata		
	Red Maple	Acer rubrum		
	Red Raspberry	Rubus idaeus		
	Rice Cutgrass	Leersia oryzoides		
	Rock Polypody	Polypodium virginianum		
	Rough-stemmed Goldenrod	Solidago rugosa		
	Round-lobed Hepatica	Hepatica americana		
	Small White Aster	Symphyotrichum racemosum		
	Sugar Maple	Acer saccharum		
	Sweet-fern	Comptonia peregrina		
	Upland Bentgrass	Agrostis perennans		
	Upright Brome	Bromus erectus		
	Virginia Creeper	Parthenocissus quinquefolia		
	White Ash	Fraxinus americana		
	White Clover	Trifolium repens		
	White Meadowsweet	Spiraea alba		
	White Pincushion Moss	Leucobryum glaucum		
	Wild Carrot	Daucus carota		
	Wild Chicory	Cichorium intybus		
	Wild Lily-of-the-valley	Maianthemum canadense		

KINGDOM	Common Name	Scientific Name	SARO	SARA
	Wild Sarsaparilla	Aralia nudicaulis		
	Wild Strawberry	Fragaria virginiana		
	Woodland Sedge	Carex blanda		
	Woodland Strawberry	Fragaria vesca		
	Yellow Birch	Betula alleghaniensis		
	Yellow Trout-lily	Erythronium americanum		

Appendix H

Significant Wildlife Habitat (SWH)

Signficant Wildlife Habitat Type	Criteria	ELC Observed	SWH Present	Comments
Wildlife Concentration Areas				
Waterfowl Stopover and Staging Areas (Terrestrial)	Fields with sheet water during the spring	NO	NO	ELC Not observed
Waterfowl Stopover and Staging Areas (Aquatic)	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration	YES	YES	Offshore area of Gold Lake
Shorebird Migratory Stopover Area	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats	YES	YES	Offshore area of Gold Lake
Raptor Wintering Area	The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors	NO	NO	ELC Not observed
Bat Hibernacula	Caves, mine shafts, underground foundations and Karsts. Hibernacula relatively poorly known	NO	NO	ELC Not observed
Bat Maternity Colonies	Mature forests with >10 ha of large diameter (>25 cm dbh) wildlife trees, 21 snags per hectare preferred	NO	NO	ELC Not observed
Turtle Wintering Areas	Within core habitat, water must be deep enough not to freeze and have soft mud substrates	YES	NO	Hardened shore and Bottom, SWH not present
Reptile Hibernaculum (Turtles assessed separately)	Below frost lines in burrows, rock crevices and other natural or naturalized locations. Rock crevices, talus slopes, etc.	NO	NO	ELC Not observed
Colonial Nesting Bird Breeding Habitat (Bank and Cliff)	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	NO	NO	ELC Not observed

Colonial Nesting Bird Breeding Habitat (Tree/Shrubs)	Live or dead standing trees (typically 11 to 15 m tall) in wetlands, lakes, islands and peninsulas. Occasionally shrubs and emergent vegetation.	NO	NO	ELC Not observed
Colonial Nesting Bird Breeding Habitat (Ground)	Rocky island or peninsula within a lake or river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs	NO	NO	ELC Not observed
Deer Yarding Areas	Core (Stratum I) is located within Stratum II. Core is critical for survival of deer during winter months	NO	NO	ELC Not observed
Rare Vegetation Communities				
Beach/ Beach Ridge/ Bar/ Sand Dunes	Vegetation can vary from patchy and barren to tree cover but less than 60%. Characterised by unstable sand.	NO	NO	ELC Not observed
Shallow Atlantic Coastal Marsh	Shallow marsh occurs on shallow mineral (sand) or mineral organic (sandy peat) shoreline subject to low wave energy, on inland lakes and beaver ponds	NO	NO	ELC Not observed
Cliffs and Talus Slopes	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	NO	ELC Not observed
Rock Barren	Vegetation can vary from patchy and barren to tree cover but less than 60%. Rock barrens are characterized by extensive areas of exposed granitic rockbedrock sparsely vegetated	YES	NO	Only a small rim around the shoreline was treed/vegetated before.
Sand Barren	Typically >0.5 ha with exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion	NO	NO	ELC Not observed

Alvar	Typically >0.5 ha with level, mostly fractured calcareous bedrock	NO	NO	ELC Not observed
Old Growth Forest	Woodland areas 30 ha or greater with at least 10 ha interior habitat assuming 100 m buffer at edget of forest	NO	NO	ELC Not observed
Bog	Bogs are nutrientpoor, acid peatlands dominated by peat mosses (Sphagnum sp.), ericaceous shrubs and sedges (Cyperaceae). The water table is at or near the surface in spring and slightly lower the remainder of the year and is vitually isolated from mineral soil waters	NO	NO	ELC Not observed
Savannah	Any tallgrass prairie habitat that has tree cover between 25 - 60%	NO	NO	ELC Not observed
Red Spruce	Red Spruce is a valued wildlife cover tree. Historically red spruce was much more abundant then it is now within the Ecoregion 5e forests.ccxiii Red spruce is a shade tolerant conifer that evolved within tolerant hardwood forests ccxiii . Red spruce grows best in a cool, moist climate. It will grow in shallow, till soils (ave. of 46 cm) and may grow on sites unfavourable for other species such as organic soils over rock, steeper slopes, and wet bottomlands, although poorly drained sites will inhibit growth.	NO	NO	ELC Not observed

Tallgrass Prairie	Dominated by prairie grasses with < 25% tree cover	NO	NO	ELC Not observed
White Oak	White oak is a valued wildlife mast producing tree. The mast produced by the white oak tree is often preferred over the more common red oak acorn. Forest stands containing white oak trees are uncommon in the Great Lakes St. Lawrence Forest.	NO	NO	ELC Not observed
Specialized Habitat for Wildlife				
Waterfowl Nesting Area	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	YES	NO	No wetland along shoreline of property wetland present to the west offsite
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands or in structures over water	YES	YES	May have been but trees clear-cut on the property.
Woodland Raptor Nesting Habitat	All natural or conifer plantation woodland / forest stands >30 ha with >10 ha of interior habitat	NO	NO	ELC Not observed
Turtle Nesting Areas	Close to water with sand and gravel that turtles are able to dig in, located in open sunny areas.	NO	NO	Shoreline is hardened with bedrock, no significant accumultations of sand.
Seeps and Springs	Any forested area (with >25% meadow/field/pasture) within headwaters of a stream or river system	NO	NO	ELC Not observed
Aquatic Feeding Habitat	Habitat may be found in all forested ecosites adjacent to water.	YES	NO	SWH not present, no aquatic plant species offshore, bottom consists of bedrock and
Mineral Licks	Habitat may be found in all forested ecosites	NO	NO	Type of bedrock does not contain appreciable amounts of salt.
Denning Sites for Mink, Otter, Marten Fisher and Eastern Wolf	Habitat may be found in all forested ecosites.	NO	NO	Bedrock near or at surface not caves or dens observed.

Amphibian Breeding Habitat (Woodland)	Presence of a wetland, pond or woodland pool >500m^2, within or adjacent to woodland	NO	NO	Bedrock near or at surface plus steep valley slopes would prevent amphibians from
Amphibian Breeding Habitat (Wetlands)	Wetlands >500m^2 (25m diameter), supporting high species diversity	YES	YES	SWH Present within valley that connects Gold Lake to westerly
Mast Producing Areas	ELC Ecosites: G015 G017 G019 G027-G028 G041-G043 G057 G059 G072 G090 G106 G108 G121 Central Ontario Forest Ecosites: ES14 ES17.1 ES23 ES24 ES25 ES26	NO	NO	ELC Not observed
Habitat of Species of Conservation Concern (other than Threatened or Endangered)				
Marsh Breeding Bird Habitat	Nesting occurs in wetlands consisting of shallow water with emergent aquatic vegetation Green Heron: edge water habitat	YES	YES	SWH present within wooded swmap/marsh west of the subject site.
Open Country Bird Breeding Habitat	Large grassland areas (including natural and cultural field and meadows) >30 ha	NO	NO	ELC Not observed
Shrub/Early Successional Bird Breeding Habitat	Large field areas succeeding to shrub thicket habitats >10 ha in size	NO	NO	ELC Not observed
Special Concern and Rare Wildlife Species	All Special Concern and Provincially Rare plant and animal species. May also consider Area Sensitive and Culturally Sensitive Species	NO	NO	ELC Not observed
Animal Movement Corridors				
Amphibian Movement Corridors	Determined as part of breeding habitat assessment	NO	NO	Subject site is elevated above water features and not connection to off-site wetlands or
Cervid Movement Corridors	Corridors may be found in all forested ecosites.	NO	NO	ELC Not observed
Furbearer Movement Corridor	All Forested Ecosite Codes adjacent to or within shoreline habitats.	YES	YES	Furbearing species may have used the woodland to move along the shoreline, however, the trees have been