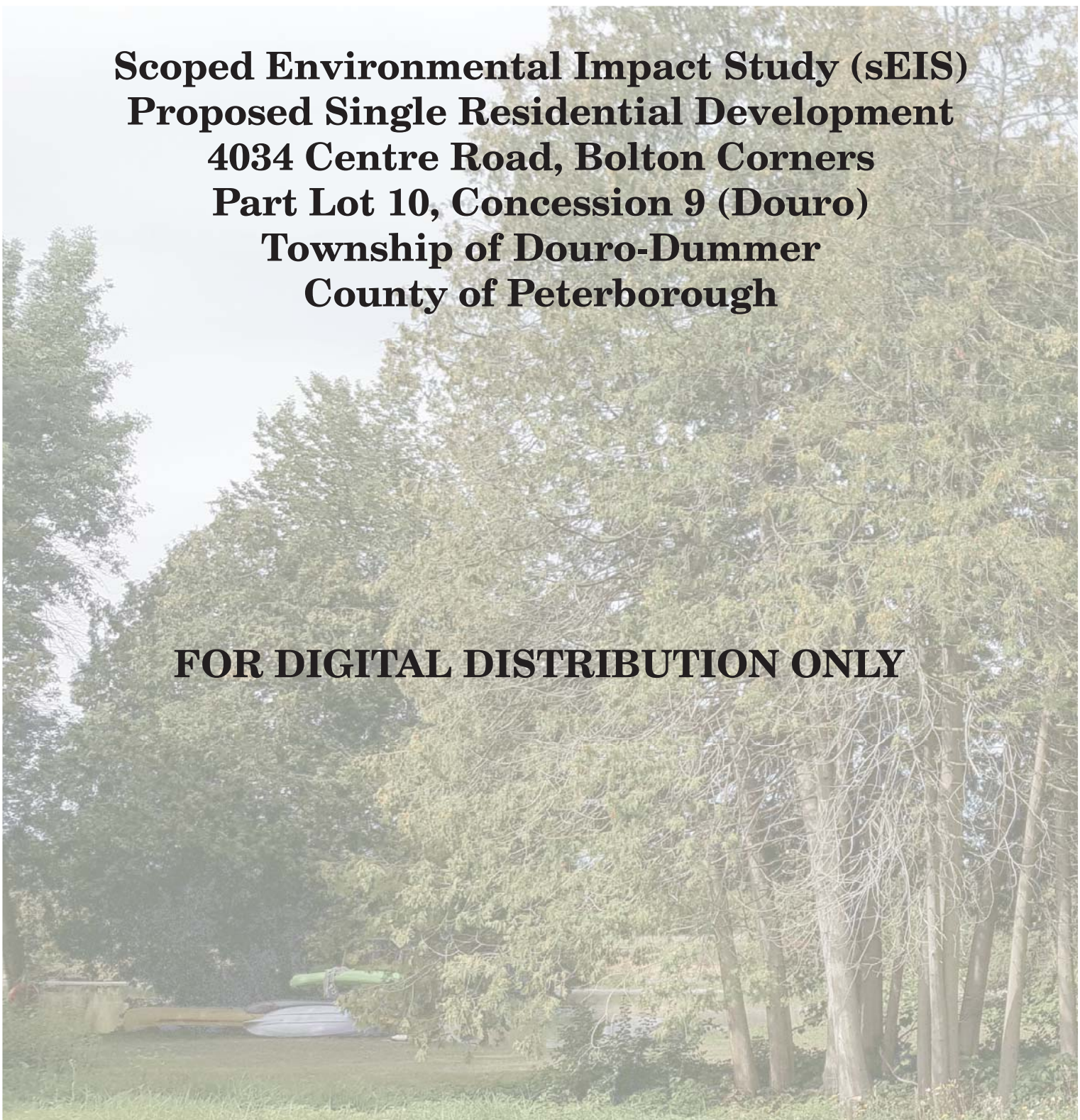
Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough



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Prepared For:

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Project #: 21-2979

October 2021

ORE
Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

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October 27, 2021

David Paterson & Kathryn Carrington
1152 Scollard Drive
Peterborough, Ontario
K9H 0A7

Attention: **David Paterson & Kathryn Carrington**

Re: *Scoped* Environmental Impact Study (*s*EIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer, County of Peterborough
ORE File No. 21-2979

We are pleased to provide this *scoped* Environmental Impact Study (*s*EIS) for the above referenced property. The report has been completed in support of your application for a Building Permit to construct a single residential home at the above-mentioned property, on an existing undersized lot.

It is understood that you will require a minor variance since the proposed development plans are to develop a house that will cover 17% of the lot area (the Zoning Bylaw allows a maximum of 15% coverage). The property is also within close proximity to the Otonabee River, therefore, an *s*EIS is required to support the application.

Provided, the recommendations outlined in this report are adhered to, any potential adverse impacts to these receptors should be mitigated.

We trust that this report will be sufficient for any agency reviews. Should you have any questions or require clarification, please do not hesitate to contact our office.

Yours truly,
Oakridge Environmental Ltd.

Rob West, HBSc., CSEB
Senior Environmental Scientist

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Scoped Environmental Impact Study (*s*EIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
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1.0 Introduction

Oakridge Environmental Ltd. is pleased to present this *scoped* Environmental Impact Study (*s*EIS) as a supporting document to our client's application for a Building Permit, to construct a single residential home at the above-mentioned property, on an existing undersized lot.

It is understood that a minor variance will be required, since the proposed development plan is to construct a residence that will cover 17% of the lot area, whereas the Zoning Bylaw allows a maximum of 15% coverage. The property is also within close proximity to the Otonabee River, therefore, an *s*EIS is required to support the application.

The mandate of this *s*EIS is to characterize the current site conditions, identify any potential development constraints, determine whether the proposed development is feasible with respect to any sensitive features, and if so, provide recommendations with regard to mitigating potential impacts on the identified features.

The following sections outline our data sources, methodologies, findings and recommendations.

2.0 Site Locations and Description

The subject site is located northeast of Peterborough, Ontario. To access the site from Peterborough, take Nassau Mills Road (County Road 32) north past Trent University and along the Otonabee River, to the intersection of Centre Road, at Bolton Corners. The subject site is located immediately west of Nassau Road, along the extension of Centre Road (Figure 1 and 2).

The total area of the property is approximately 0.28 ha (0.69 acres). The majority of the site consists of manicured lawn space associated with a typical residential development area. The property currently contains no structures, however, is surrounded by residential development and is proximal to the Otonabee River.

3.0 Proposed Development / Site Alteration

It is understood that the property owner would like to construct a single, privately serviced residential home, with a building footprint of approximately 478.7 m^2 (5,153 ft^2). A pool and landscaping are also proposed. A copy of the Site Plan is

provided in Appendix A.

It will be necessary to fill and grade the development footprint to a relatively flat and stable surface. No site alterations will occur within 30 m of the Otonabee River.The site alterations will not occur less than 30 m from the Otonabee River.

4.0 Policy

According to the information provided, the *s*EIS was triggered due the subject site being located within 120 m of a hydrologic feature, the Otonabee River. As such, this *s*EIS has been *scoped* specifically to address potential impacts to this feature and has been formatted in accordance with the Otonabee Region Conservation Authority (ORCA) Regulation for Development, Interference with Wetlands and Alterations to Shorelines And Watercourses and the *Watershed Planning & Regulations Policy Manual* (2015).

According to the Site Plan (Appendix A), a flood elevation of 221.05 masl has been identified along the western property boundary. Presumably, the flood elevation was obtained from ORCA. Consequently, the proposed development would also be subject to the ORCA Regulation in this regard.

In addition, this *s*EIS also has regard for the following:

- Federal Species at Risk Act (SARA);
- Provincial Endangered Species Act (ESA), and
- the 2020 Provincial Policy Statement (PPS).

5.0 Physical Setting

The subject site exhibits a generally flat topography, typical of the Otonabee River valley lands (Figure 2). The site is a slightly elevated and formerly treed area which drains to the Otonabee River, situated approximately 30 m to the west. There are no mapped watercourses directly on the property. The closest mapped watercourse to the site (other than the river) is Sawyers Creek, situated approximately 1.8 km to the northeast A minor local drainage divide separates the subject site from the creek, partially following County Road 32. A shallow area of intermittent runoff flows occurs immediately west of and along the western lot boundary. Runoff from the lands to the north of the site are conveyed in a poorly defined swale that passes by the site's

northeast corner to the west runoff ditch area.

The site is situated outside of the Otonabee River floodplain, situated on slightly higher ground than the culvert and associated drainage swale on the north and west boundary of the site. Given the flat, low-lying topography and proximity to the Otonabee River, a high water table condition is likely in the area.

As illustrated by Figure 3, the site geology is typical of the Otonabee River valley. The dominant soil type in the site area is the dense, silt, clay and gravel till, referred to as the Newmarket Till. The till is drumlinized, with the closest mapped drumlin being about 200 m to the west (on the west side of the river). This till is generally considered to be a regional aquitard.

The Otonabee River was once an ancient glacial spillway, carrying enormous quantities of meltwater southward to glacial Lake Iroquois. During that period, the spillway eroded a wide valley that the present day Otonabee River occupies. Much of the valley was eroded into the Newmarket Till, down to the bedrock, with the ancient bottom covered by coarse sand and gravel (glaciofluvial) deposits, forming today's flat valley morphology.

Bedrock outcrop/subcrop occurs about 300 m southwest of the site and is likely fairly shallow below the subject site. However, published mapping indicates that the site is underlain by the coarse glaciofluvial deposits (sand and gravel). These may directly overlie the bedrock or the till. If the till is present, it is expected to be a very thin layer occurring directly above the limestone.

Based on the geological setting, a shallow water table condition should be expected at the site. Perusal of Ministry of the Environment, Conservation and Parks (MECP) well record data for the site area appear to confirm this. For example, nearby well No. 5116227 (a dug well) encountered 3.8 m of (loose) sand with a static water level of 1.8 m (below ground surface).

6.0 Background Data

6.1 Natural Heritage Information Centre (NHIC)

The NHIC provides an online database managed by MNRF. 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 historical *Species at Risk* (SAR) occurrences and for Areas of Natural and Scientific Interest (ANSI).

The property falls within the 1 km^2 square 17QK1718. The query indicates that there are no Natural Areas reported in the area. The query indicates that four (4) Species at Risk (SAR) have been recorded in the area:

Common Name	**Scientific Name**	**S-Rank/SARO Status**
Eastern Meadowlark	*Stunella magna*	S4B/Threatened
Bobolink	*Dolichonyx oryzivorus*	S4B/Threatened
Snapping Turtle	*Chelydra serpentina*	S3/Special Concern
Northern Map Turtle	*Graptemys geographica*	S3/Special Concern

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

6.2 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 17TQK11, Region 16, Peterborough. The Summary Sheets for this atlas area are provided in Appendix C.

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**	**Status**
Eastern Wood-Pewee	*Contopus virens*	Special Concern
Barn Swallow	*Hirundo rustica*	Threatened
Wood Thrush	*Hylocichla mustelina*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Bobolink	*Dolichonyx oryzivorus*	Threatened
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern
Black Tern	*Chlidonias niger*	Special Concern
Canada Warbler	*Cardellina canadensis*	Special Concern
Least Bittern	*Ixobrychus exilis*	Threatened
Bank Swallow	*Riparia riparia*	Threatened

[1] managed by Bird Studies Canada.

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

6.3 iNaturalist

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

- Caspian Tern (*Hydroprogne caspia*), reported approximately 350 m south of the site on August 15, 2020. This avian species is not listed as a Species at Risk in Ontario, however, is tracked by NHIC as it is considered rare in the North American - Nature Serve database.

- Snapping Turtle (*Chelydra serpentina*), reported approximately 400 m northeast of the site on June 20, 2020. Snapping Turtle is listed as "Special Concern" by *Species at Risk Ontario* (SARO) and is not protected under the *Endangered Species Act* (ESA). Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season, from early to mid summer, females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams. Snapping Turtles often take advantage of man-made structures for nest sites, including roads (especially gravel shoulders), dam and aggregate pits.

- Monarch (*Danaus plexippus*), reported approximately 450 m southwest of the site in September, 2019. Monarch is listed as "Special Concern" by SARO and is not protected under the ESA. Throughout their life cycle, Monarchs use two different types of habitat in Ontario. Only the caterpillars feed on milkweed (*Asclepias* spp.) plants and are confined to meadows and open areas where milkweed grows. Adult butterflies can be found in more diverse habitats where they feed on nectar from a variety of wildflowers. Monarchs spend the winter in central Mexico.

- Ross's Goose (*Anser rossii*), reported approximately 500 m southwest of the site on December 9, 2014. This avian species is not listed as a Species at Risk in Ontario, however, is tracked by NHIC as it is considered rare in the North

American - Nature Serve database.

- Eastern Meadowlark (*Sturnella magna*), reported approximately 650 m southwest of the site on April 13, 2020. Eastern Meadowlark 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.

- Proghorn Clubtail (*Phanogomphus graslinellus*), reported approximately 1 km southwest of the site in May, 2020. This species of dragonfly is not listed as a Species at Risk in Ontario, however is considered rare by the North American Nature Serve database and NHIC.

- Aster Borer Moth (*Papaipema impecuniosa*), reported approximately 1.5 km northwest of the site in September, 2017. This species of moth is not listed as a Species at Risk in Ontario, however is considered rare by the North American - Nature Serve database and NHIC.

- Midland Painted Turtle (*Chrysemys picta picta*), reported approximtely 1.6 km northeast of the site in October, 2019. This species of turtle is not listed as a Species at Risk in Ontario, however, is under consideration by the federal SAR Registry.

- Bald Eagle (*Haliaeetus leucocephalus*), reported approximately 1.7 km northeast of the site on December 18, 2020. Bald Eagle is listed as "Special Concern" by (SARO), and is not protected under the (ESA). The species has to be nesting below the boundary delineated within northern Ontario to be included in this group. The Bald Eagle prefers mature forests on the edge of waterways which includes large swamps and lake or river systems. Its main diet consists of fish and carcasses. The species tends to nest within lakeside pine trees as the dense needles tend to conceal their large stick nest from other predator species. There are several known nesting sites within the Trent-Severn Waterway and Kawartha Lakes system.

- Eastern Milksnake (*Lampropeltis triangulum*), reported approximately 1.7 km southwest of the site in May, 2009. This species of snake is not listed as a Species at Risk in Ontario, however, is listed as Special Concern in the federal SAR Registry database.

- Boreal Chorus Frog (*Pseudacris maculata*), reported approximately 2.2 km southwest of the site on April 16, 2020. This species of amphibian is not listed as a Species at Risk in Ontario, however is considered rare by the North American - Nature Serve database and NHIC.

6.4 eBird

eBird is a citizen science database, whereby birding individuals can attend public areas referred to as "hotspots" and list species of bird they have detected each time they visit the hotspot location. According to the eBird Geographic Information System (GIS) database, the nearest hotspot is Otonabee River - between Lock 24 and 25, located approximately 1 km northeast of the site. A total of 107 species were recorded. Of those, four (4) species are considered SAR, they are:

Common Name	**Scientific Name**	**Status**
Barn Swallow	*Hirundo rustica*	Threatened
Bank Swallow	*Riparia riparia*	Threatened
Eastern Meadowlark	*Sturnella magna*	Threatened
Bald Eagle	*Haliaeetus leucocephalus*	Special Concern

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

7.0 Inspection Methodologies

7.1 Vegetation

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

There have been a number of updates to the ELC scheme to further refine the classification of Ecosites throughout Ontario. As a result, the 2008 *Draft* ELC Guide

provides a further breakdown of the 1998 ELC Guide - First Approximation communities and includes many new communities to index from. The 2008 ELC scheme also provides a cross-reference to the 1998 guide communities. This report uses a combination of both the 1998 ELC communities (which are considered the primary vegetation communities) and the 2008 Draft ELC to supplement the vegetation community lists.

Prior to conducting the site inspection, aerial photography of the subject site was analysed to roughly delineate communities based on recognizable vegetation differences. Each identified community was subsequently inspected. Dominant vegetation types were recorded and boundaries of the various communities mapped on an air photo or utilizing a dGPS.

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

7.2 Avifauna Surveys

ORE staff attended the site once during the late summer season and endeavoured to detect all available avian species by sight, calls and notes, within and proximal to the site. In some instances, bird calling devices and "pishing and squeaking" were used to attract bird species from within the wooded areas.

All species overheard or observed during the survey were recorded.

7.3 Mammals

Mammals were detected utilizing the methodologies outlined in the MNRF'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. Tracking, visual encounters and other signs to detect mammals were deemed sufficient for the purpose of this study.

No bat detection or bat snag surveys were completed as part of this *s*EIS as the

inspection was completed outside the seasons to properly assess/detect bat species.

According to the Land Information Ontario (LIO) database, the subject site does not contain any deer wintering habitat nor any other significant mammal wildlife habitat for those species outlined in the MNRF's October 2000 - Significant Wildlife Habitat Technical Guide.

8.0 Site Inspection Data

8.1 Site Inspections

ORE staff attended the site on the following date:

Date of Inspection	**Temp. ^{O}C**	**Beaufort (Wind) Scale**	**Conditions Reason for Inspections**
September 1, 2021 10AM - 12PM	19	1 - Light air	80% overcast. Clear and Cool. Observe vegetation conditions, hydrologic feature identification, ELC mapping, species list, habitat assessments.

Appendix E contains the list of species identified on the property during our inspection.

8.2 Ecological Land Classification (ELC)

Based on our site observations, we have determined there is only one zone of habitat within and along the edge of the subject property. As per the Ecological Land Classification for Southern Ontario (FG-02), 1998, this habitat is:

1. Rural Property (CVR-4)

No description is provided in the draft May 2008 Ecological Land Classification for Southern Ontario.

Figure 4 illustrates the distribution of the community on-site. Representative photos of the site are provided in Figures 5 & 6.

8.3 Fauna

No significant fauna were observed directly on-site. Only tracks of common/secure mammals were observed on the subject parcel.

The fauna species observed on-site are listed within Appendix E.

8.4 Endangered or Threatened Species

The Endangered Species Act and many municipal level Official Plans provide regulation and guidelines with respect to protection of Endangered and Threatened species. During our inspections, no threatened or endangered Species at Risk (SAR) were detected. Although the survey was completed outside of the optimum time of year to detect the majority of SAR, no significant or rare vegetation communities were observed directly on the property.

The following species of significance were listed within the NHIC online database:

Common Name	**Scientific Name**	**Status**
Eastern Meadowlark	*Stunella magna*	S4B/Threatened
Bobolink	*Dolichonyx oryzivorus*	S4B/Threatened
Snapping Turtle	*Chelydra serpentina*	S3/Special Concern
Northern Map Turtle	*Graptemys geographica*	S3/Special Concern

Eastern Meadowlark and Bobolink would not utilize the subject site or surrounding lands, as these lands consist mainly of maintained lawnspace and residential use. No large tracts of agricultural grasslands/hay fields occur on-site nor are there in the vicinity of the subject property.

The Snapping Turtle and Northern Map Turtle would most likely utilize the Otonabee River and shoreline areas for part of their life cycle. The shores could be used for nesting purposes, any rock shoals or logs could be used for basking and most definitely these species would use the river to migrate back and forth to these habitats.

All of the SAR avian compiled from the Ontario Breeding Bird Atlas could find the habitats in the general vicinity of the site to be attractive. The birds and their habitats are described below:

- Eastern Wood-Pewee - deciduous dominated woodlands adjacent to the Otonabee

River extending into upland areas across County Road 32.

- Barn Swallow - Shoreline, shoreline outbuildings associated with Otonabee River and farmsteads along County Road 32.

- Wood Thrush - Secondary succession woodlands where tree harvesting has occurred in the past, small to large tract woodlands that remain along Otonabee River shoreline and across County Road 32 on farmsteads that possess secondary deciduous and mixed woodland habitats.

- Bank Swallow - Associated with the Otonabee River where the river cuts/erodes the soil banks and allows the swallows to mine their nests in the sides of the banks.

- Bald Eagle - Would utilize the Otonabee River water and associated wetlands to forage within. It may also nest within some of the tall White Pines and other coniferous species along the river.

- Canada Warbler - Coniferous dominated woodland along the edge of rivers and creeks.

- Black Tern - Large marshes to nest, forage and bear young within. This species may also frequent the Otonabee River for migratory and foraging purposes.

- Least Bittern - Similar to the Black Tern, this species will nest, forage and bear young within large marshes. The species may also utilize the Otonabee River for migratory and foraging purposes. The river can be quite busy, whereas this species prefers the secrecy of large marshlands with an abundance of emergent vegetation.

No Species at Risk (SAR) avian were detected on the property. However, the surveys were not conducted at the appropriate time of year to detect the above mentioned species.

The subject property and surrounding lands contain habitat that would be marginal for some of the Species at Risk identified in the OBBA. As the site is surrounded by other residences and their associated manicured lawn areas, the probability of containing SAR avian is limited.

9.0 Impact Assessment

9.1 General Considerations

Based on our assessment, it is our opinion that potential impacts related to future development of the site could include the following:

1) Potential degradation/alteration of the upland communities that could impact the waterway downgradient of the subject site resulting from erosion - sedimentation and water quality deterioration.

2) Potential impacts related to loss of vegetation within the property (i.e., upgradient of the runoff collection area to the west and Otonabee River) that could reduce the overall vegetation buffering capacity of these waterways and indirectly impact these sensitive features. Currently, there is little to no vegetation between the proposed location of the building envelope and the west runoff collection feature. The only vegetation is some cedar trees along the west property edge and other shrubby vegetation overlooking the west runoff collection feature. The majority of the lot is currently covered by lawn.

3) Potential impacts related to construction activities (vegetation removal, etc.). Some of the unkept tallgrass lawn areas on the lot and the edge habitat along the west boundary could host grassland bird species in the spring period. As such, construction activities could potentially flush a bird species from a nest and/or destroy the nest site completely once the bird has settled in the area.

4) Potential impacts related to post-construction occupation and use of the site (e.g., disturbance of fauna, excessive lighting near waterways, etc.).

These general impact considerations are further discussed in the following sections.

9.2 Development Envelope

Our field investigations have confirmed that the two (2) watercourses that occur nearest the site boundary are the west runoff collection feature that abuts the west edge of the property boundary and the Otonabee River, which occurs further to the west (as illustrated on Figure 7).

According to the Site Plan (Appendix A), the west runoff collection feature represents a potential flood feature that occurs directly adjacent to the subject property. The flood

elevation (dashed line on the plan) occurs directly along the western limit of the property line. Therefore, development could impact the Otonabee River and west runoff collection feature habitats, if significant disturbances or alterations were to occur proximal to the flood elevation.

Figure 7 illustrates a proposed outbuilding and (presumably) the in-ground pool within approximately 9 m to 10 m east of the flood elevation/property line. The proposed residence will occur almost 18 m from the flood elevation. The disturbance area/ construction footprint for the main residence is assumed to be approximately 6 m surrounding the perimeter of the proposed residence.

A new sewage disposal system is proposed to be constructed with its footprint within the southeast corner of the site. The system appears to be greater than 30 m from the west runoff collection feature which is double the requirement from the Ontario Building Code for Sewage Disposal Systems.

Increasing the impermeable surfaces on the subject site can exacerbate potential poor quality runoff conditions as the impermeable surfaces of the buildings concentrate the runoff and potentially directs these untreated flows toward the west runoff collection feature (receiving body).

Based on these findings, both the lack of tree and shrub vegetation in the downgradient direction and increase in impermeable surfaces directly upgradient of the west runoff collection feature and Otonabee River may have undesirable impacts on these waterbodies.

Recommendations are provided in a following section for mitigation of impacts on the watercourse features.

9.3 Species at Risk Fauna

No Species at Risk (SAR) were detected on the property. It is doubtful that SAR Turtles or avian would enter onto the subject parcel for nesting purposes when there is an abundance of pristine woodland, waterways, grasslands at the river's edge, which are not occupied by people.

None of the woodland related SAR avian would occur on-site as there is not suitable habitat for those species identified in the database. Nor would the agricultural SAR occur on-site as it is a very small clearing, whereby, most field related SAR birds require large tracts of open hay fields.

The proposed residence, pool and outbuilding will occur in existing lawnspace. Therefore, it should be possible to construct all of the new structures without impacting any sensitive features or SAR habitat, provided standard construction mitigation measures are applied to the areas surrounding the footprint of the residence, outbuilding and pool.

Considering the sensitivity of the intermittent drainage area directly west of the property line and the potential for it to be hydraulically connected to the Otonabee River during flood periods, it would be beneficial to include/target native tree plantings directly downgradient of the system. This, in addition to the 30 m setback, should be sufficient to attenuate the effluent in the subsurface well before reaching the west runoff collection feature and/or Otonabee River system.

The introduction of the new structures on-site could improve conditions for certain SAR as these would potentially create new nesting sites for species such as Barn Swallow. The underside of the eaves would be potential nesting sites for this species. The nearby west runoff collection feature and Otonabee River would be foraging areas for Barn Swallow, also.

No steep embankments were observed on the subject site that would be suitable for Bank Swallow. As such, ORE staff presume that the reported occurrence of this species was elsewhere along the Otonabee River. The absence of habitat on-site for this species would preclude any adverse impacts from occurring to Bank Swallow.

According to the OBBA, there could be an abundance of SAR avian present within the general vicinity of the site. ORE staff expect that any SAR nesting areas and habitat would remain unharmed during construction and into the post construction period. Breeding avian would not be impacted if major construction activities can avoid the Breeding Bird Period (i.e., April 1 to August 31st each year). Provided the vegetation clearing/alterations to prepare the site for constructing the septic system and garage can occur outside this period, impacts on any SAR and other common/secure species can be mitigated.

According to the databases, Snapping Turtle and Northern Map Turtle are potential reptile SAR that could be in the general area of the subject site. Turtles are most active between April 1st and October 31st each year. Consequently, if construction can avoid this period, these turtles would be unaffected by the proposed works. If construction is to take place during the spring and summer months when turtles are active, a series of Best Management Practices (BMP) should be implemented at the site during the construction period. The practices shall include installing a heavy-duty silt fence around the limit of construction to prevent the above mentioned species from entering

the work area. The heavy-duty silt fence is listed within the province's Reptile and Amphibian Exclusion Fencing protocol. A diagram illustrating the proper way to install the exclusion fence is provided in Appendix F. If the construction is able to proceed outside the active seasons for turtle species, then a single-row of light-duty silt fence can be installed instead of the heavy-duty fence.

Given the above, it is our opinion that a SAR permit should not be necessary under the Endangered Species Act, as the development can be constructed entirely within the existing lawn space without impacting any SAR or SAR habitat. It should be possible to retain/maintain all of the existing vegetative buffer along the western property limit overlooking the west runoff collection feature. Any SAR or other non-SAR wildlife would utilize these vegetated areas, regardless.

9.4 Construction Related Impacts

The main potential impacts associated with construction activities could include the following:

- loss of natural vegetation (i.e., primarily lawn and minor amounts of woodland edge);
- erosion and sediment generated by exposed and/or disturbed soils during excavation and grading activities;
- operation of equipment (e.g., noise and vibration) during the breeding period of local faunal species;
- presence of construction debris and waste materials blowing into natural habitats;
- potential fauna entering the work area during construction, and
- sensitivity of the site with respect to imported fill materials, grading, altered areas and post construction rehabilitation of the ground surface.

Recommendations for mitigation of the above are presented in a following section.

9.5 Post Construction Impacts

Post construction impacts are those that may occur during the long-term use and occupation of the site, including:

- loss of woodland edge and upland secure vegetation related to clearing/alterations, further clearing of land (e.g., to establish footprints,

pool, outbuildings,, etc.), and

- impacts related to the use of inappropriate external lighting directly on or near the structures that could impact species such as bats, nocturnal avian, amphibians (etc.), that could utilize the west runoff collection feature and Otonabee River as a migratory corridor.

Recommendations are provided below to ensure that the potential for impacts relating to occupation and use of the house, garage and construction of the new septic system are minimized.

10.0 Recommendations

10.1 Development Envelopes and Constraints

- The proposed residence/garage, in-ground pool, outbuilding/shed and new septic system envelopes are illustrated by Figure 7. ORE staff have added a 3 m wide swath around each development feature to indicate the recommended limits of the disturbance areas associated with each component. The disturbance areas indicate where most machinery, excavating and surface alterations will occur. These areas will require protective measures to ensure the activities do not extend further than necessary, to limit potential impacts on surrounding vegetated areas.

- Provided the authorities are in agreement with the proposal, it should be possible to construct all of the proposed structures without impacting any natural vegetation. The natural vegetation along the property limit would be retained and the buffering capacity of the vegetation on the property to the west and along the property line would remain intact. Based on the proposed location of the outbuilding and in-ground pool, those structures will be approximately 9 m to 10 m from the property line and will be the most proximal to the Key Hydrologic Features in the vicinity of the subject site. In contrast, the proposed residence/garage and septic system are proposed to be located at a distance greater than 30 m from both the west runoff collection feature and the Otonabee River. Typically, a setback of this distance is considered sufficient by the Conservation Authority. However, because the property appears to be low-lying in relation to the west runoff collection feature and Otonabee River, additional mitigation is included with respect to the area directly downgradient of the proposed sewage disposal unit.

- The proposed sewage disposal system will occur greater than 15 m to the off-site west runoff collection feature which meets the Ontario Building Code requirement for Sewage Systems in Ontario. Provided the property owner has met with the local Health Unit on-site and the Health Unit has approved the proposed location, the sewage system will not impact this feature. However, to further mitigate impacts to the localized intermittent runoff feature and river, ORE staff recommend that a series of native trees and/or shrubs be planted downgradient of the septic system. The trees should be planted greater than 6 m from the sewage system to ensure the roots do not damage the conventional bed system once the mature. The planted nursery stock would take nutrients up from the shallow groundwater table, thus improving the quality of the flows within this regime.

- To mitigate for the alterations in the area of the in-ground pool and outbuilding, we recommend that thirty (30) bare root whip native trees/shrubs be planted in the western portion of the property around those structures in the post construction period. The added vegetation content will compensate for the larger impermeable surface area of the residence/garage by buffering the west runoff collection feature and river Hydrologically Significant Features (HSFs). The planted trees and shrubs will help attenuate nutrients and stabilize the soils in the downgradient area. Native grass seed should also be applied to any exposed/bare soils that result from the site preparation and construction activities.

- The property owner shall provide a Planting Plan illustrating which native tree and shrub nursery stock species shall be planted within the specified planting zone. A qualified individual should review the plan and verify that the stock being planted are native species. Nursery stock would be subject to availability at the time of the planting and substitutions of similar species should be acceptable.

10.2 General Design Considerations

- The Site Plan/Grading Plan should indicate whether fill will be imported to the site (the final amount/volumes), limits and the final grades to be achieved by the contractor in this area. Any fill and/or grading shall remain outside of the recommended 6 m setback from the flood elevation boundary at the west property line, as illustrated by Figure 7. An Ontario Land Surveyor (OLS) should confirm this boundary on-site and demarcate the 221.05 masl flood line boundary along the western limit of the site and demarcate/stake the 6 m setback limit, beyond

which, no alterations are allowed. The "no alteration" caveat would not apply to the manual planting of vegetation within this zone. The planting of nursery stock in the 6 m setback is preferred as it will shade this area, improving the moisture regime and soil stability.

- All recommended erosion controls should be installed prior to any works on the property to ensure slope stability is maintained between the development/ alteration areas on-site. As mentioned above, if the construction is to occur during the spring/summer months, a heavy-duty silt fence should be installed along the disturbance limits to ensure wildlife does not enter the work zone. If the work can be completed outside the April 1st to October 31st period, then a light-duty silt fence can be installed instead.

- The trees to be planted west of the proposed residence and septic system, and in the area of the proposed outbuilding and pool will help to stabilize the soils and buffer the west runoff collection feature and river from the proposed residential area (largest component of impermeable surfaces on-site). Vegetation must be established on all bare soil areas at the end of the construction, and have taken/adhered to the ground surface before any of the additional controls (e.g., silt fence) can be removed. The Site Plan should illustrate how all surfaces/grades will be stabilized/finished and include all recommended erosion controls. The owner and contractor are reminded that other controls may be necessary, if silt fencing is deemed to be insufficient, based on the construction conditions. Construction should not proceed unless the proper controls are in place to prevent sediment from being released to sensitive areas, or off-site.

- Passive stormwater management controls should be incorporated into the development design. Examples include roof leaders being directed to an area where the flows will not gouge or destabilize soils over time. The warm flows from the roof leaders should be infiltrated into the ground, so as to reduce thermal impacts to the nearby natural waterways.

  These controls will assist in maintaining runoff quality and enhance infiltration which can further promote shallow groundwater and maintain the off-site west runoff collection feature and river functions. The Site Plan should include these passive stormwater management controls, especially considering the larger impermeable surface area content that will result from the residence and garage.

10.3 Construction Mitigation

- Proper erosion/sedimentation controls will be required at all times while heavy equipment is operating at the site. Heavy-duty silt fence (spring, summer and early fall period) should be installed along the construction limits as illustrated on Figure 7. Light-duty silt fence can be used outside those seasons. Bales of geotextile wrapped straw should be strategically placed inside the silt fence, especially, in areas where heavier sediment loads may occur during spring and summer storm activities. Examples of this would be at the edge of the property limits where runoff tends to drain when the lot has already been either filled and/or graded to drain radially towards the property edges. The bales can also be used at the corners of the silt fence for further stabilization. Construction should not continue during heavy precipitation events to monitor the effectiveness of the controls and install more controls, if necessary. After any storm event, the fence, bales and other erosion controls should be checked to ensure their effectiveness. If the controls were not effective, the sediment transported to the other side of the controls should manually removed, and additional controls installed prior to the next storm event.

- The heavy-duty silt fence and hay bales provide a solution to mitigate sheet runoff, not concentrated flows. Therefore, if a concentrated flow results from construction, another type of erosion/sedimentation control, such as a rock check dam that incorporates both stone and geotextile filter cloth to prevent sediment laden runoff from entering the sensitive watercourse features, should be utilized. Depending on the final grades, a rock check (or similar control) may be necessary along the northern and southerly extents, if filling and grading force runoff to the property limits.

- Only clean fill should be imported to the site. The fill should not contain organic materials such as plant debris or topsoil that may contain exotic or invasive species that could out-compete native species in the unnamed wetland or woodland. If imported topsoil is required, screened topsoil should be the only material applied to top-dress the fill. Additional topsoil may be required in the area of the proposed planting zone, depending on the organic content of the soils in this area.

  The imported fill slopes prior to the limits of the setback should be at a reasonable grade (i.e., 3:1 or shallower), to ensure that materials do not erode past the limit once the heavy-duty silt fence has been removed. Any steeper embankment slopes proposed at the site would require the installation of slope stability controls, and should be incorporated into the final Grading Plans.

- To reduce potential post-construction sedimentation, the site should be quickly seeded or sodded to re-establish the root structure within the upper soils where areas have been disturbed and soils are exposed. Planting of native trees and shrubs is also encouraged at this stage (as per the Planting Plan recommendation). Once the seeding or sodding is determined to be a success and the soils are stable at each site, the erosion/sedimentation controls can be removed.

- The property owner is responsible for the upkeep of the planted stock, if the stock dies within the first year of purchase, the property owner may still be able to obtain new stock from the nursery retailer. Most nurseries have a one (1) year warrantee provided proof of purchase is provided and the dead stock is returned to the retailer. The compensatory plantings can be part of the overall landscaping plan in the post construction era.

10.4 Species At Risk (SAR)

No SAR were identified during our inspections. However, the surveys were not conducted during the appropriate time of year to detect the majority of SAR. Therefore, the following mitigation must be applied to the site:

- Both the intermittent runoff feature and Otonabee River to the west of the subject site could possess SAR turtles and/or SAR birds. Therefore, the installation of the nursery stock trees and shrubs directly downgradient of the system will help to mitigate impacts on these species via the waterways. The plantings prior to these features will improve the quality of the effluent, which is beneficial with respect to the downgradient watercourses, and inherently any SAR that may occur within these features.

- The proposed new buildings/structures on-site may provide surfaces for nesting Barn Swallows, which could be a net benefit to this species if the species inhabits the subject site in the future.

- Migratory breeding birds utilizing the river corridor and west runoff collection feature may start nesting in the early spring season in the non-maintained overgrown scrubby areas. Therefore, clearing the on-site vegetation during this period could potentially impact nesting birds. To mitigate the potential for impacts on nesting birds, vegetation (including non-maintained overgrown grass areas) cannot be cleared on the subject site between April 1st and July 31st, corresponding to the Migratory Bird Convention Act.

Therefore, any remaining clearing, which should be very limited, must be completed before or after the above window. If the property owner maintains the lawn areas about the property and keeps the grass cut low, then birds will not nest on the ground, and this window would not apply to this development.

This window only applies to preparing the ground surface for construction. If the vegetation is cleared from the construction area and all erosion controls are installed, the building construction could resume during the spring and summer period.

- The proposed heavy-duty silt fence is included in the list of SAR turtle and snake exclusion fences in the provincial guidelines. Therefore, if the construction is to occur during the spring and summer period, a heavy-duty silt fence should be installed around all work/disturbance areas. If the work is to be conducted outside the April 1st to October 31st window, then light-duty silt fence can be used instead.

- Provided the development is contained within the footprints illustrated by Figure 7, impacts should be minimal to any SAR and other common/secure wildlife.

10.5 Post-Construction Environmental Mitigation

There are a number of mitigation measures that can be applied to protect the overall naturalness of the site and the wetland features in the area, as recommended below:

- Although the openness of the lot may be favourable with respect to maintenance, it is unfavourable from an environmental perspective when it comes to the local west runoff collection feature and river corridor habitats. The overall lack of vegetation on the lot contributes to the degradation of the west runoff collection feature and the Otonabee River. The proposed post construction planting of trees and shrubs (and their long term maintenance) will improve those conditions.

- The property owner should be aware that excessive lighting on structures can have a profound effect on nocturnal species such as owls, nightjars, bats and also amphibians. Therefore, lights must not be directed off-site toward the west runoff collection feature or toward the river corridor. Lower intensity lights such as pot lights, directed at the ground and/or ground level solar lighting located around the edge of the pool and outbuilding are suitable. Intense light that broadcasts a large footprint should not be installed in the western portion of the

site, as this can impact breeding avian, bats and amphibian populations associated with the west runoff collection feature and river corridor. If intense lights are proposed for the entryway, then these lights should the type that directs light to the ground surface.

- The use of general application pesticides and herbicides must adhere to the Pesticides Act, R.S.O. 1990. Alternative pest management practices are available as pesticides and herbicides can impact water quality in the watercourses and consequently, any associated wildlife.

- The site conditions would be extremely sensitive to the applications of fertilizers as there is little to no buffering capacity on-site to take up those extra nutrients. Therefore, ORE staff does not recommend the property owner apply excess fertilizers to the subject site as these could be enter the west runoff collection feature to the west and ultimately the Otonabee River system, adversely impacting the water quality and fauna associated with these Key Hydrological Features (KHFs).

10.6 Closing Remarks

Considering the above, it is our opinion that the applicant should be granted a Building Permit for the proposed development, provided the mitigation measures recommended herein are adhered to. ORE staff recommends that the measures outlined in this report be included in the Site Plan and Planting Plan, and that a Mitigation Measures Agreement (or similar) should be formed with the Township. This ensures that the mitigation measures outlined in this *s*EIS are adhered to and that both parties can "sign-off" once the measures have been successfully implemented at the site.

The proponent should recognize that this *scoped* Environmental Impact Study provides recommendations pertaining only to environmental issues. Other issues related to Land Use Planning, servicing and/or Engineering may also need to be addressed with respect to any future application(s) and/or development plans.

The proponent should obtain all required permits from the agencies prior to commencing any construction on-site. Failure to do so may result in delays and/or other liabilities.

End of *Scoped* EIS Report

Yours truly,
Oakridge Environmental Limited

Rob West, HBSc. CSEB
Senior Environmental Scientist

Selected References

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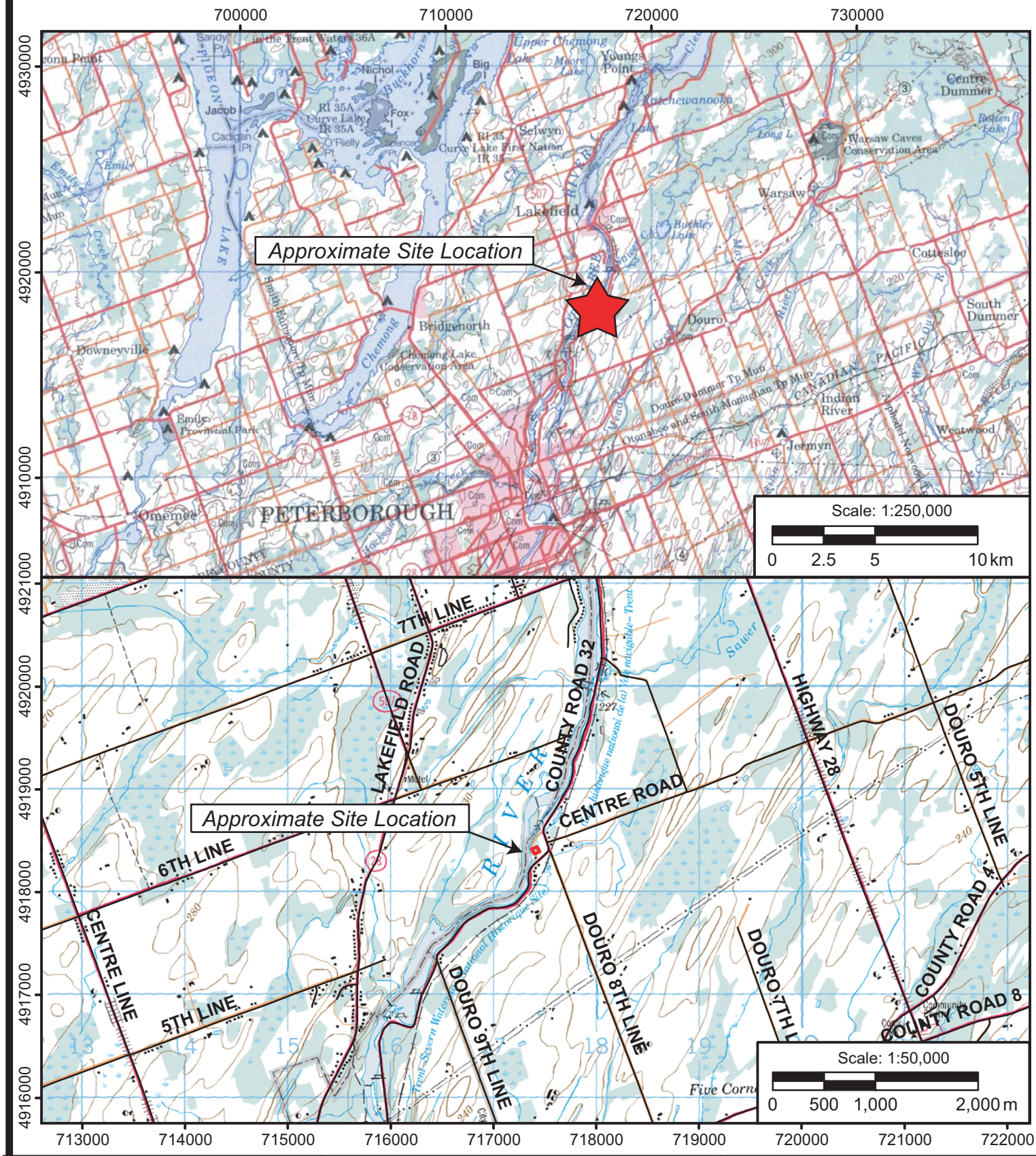
Figures



N

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

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

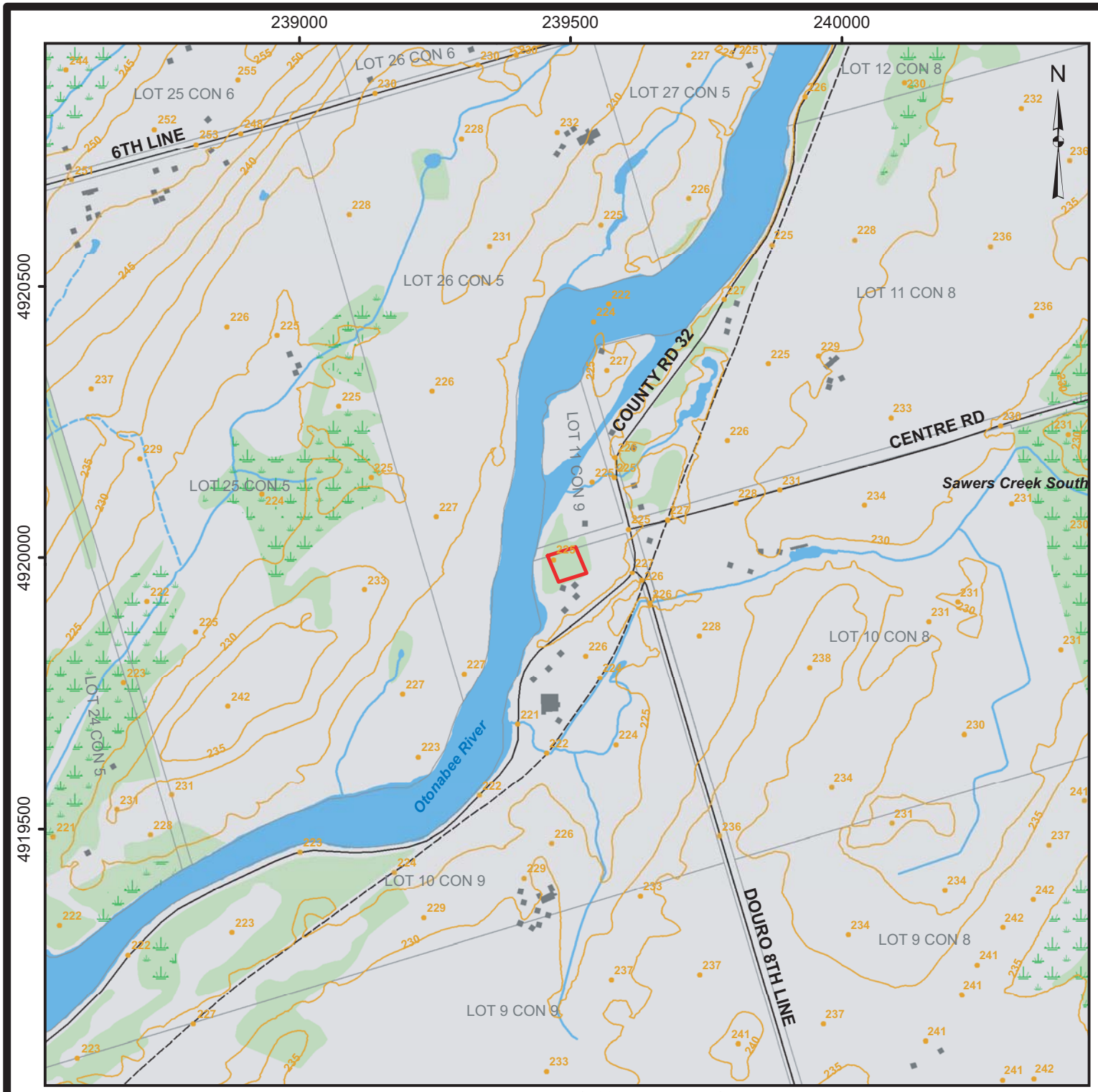
North American Datum 1983
UTM Zone 17

TITLE
General Location

PROJECT # 21-2979

DATE October 2021

FIGURE NO. **1**



North American Datum 1983 - UTM Zone 17

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

LEGEND

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

Scale: 1:10,000

0 100 200 400 m

Notes: Base map provided by Land Information Ontario (2020).

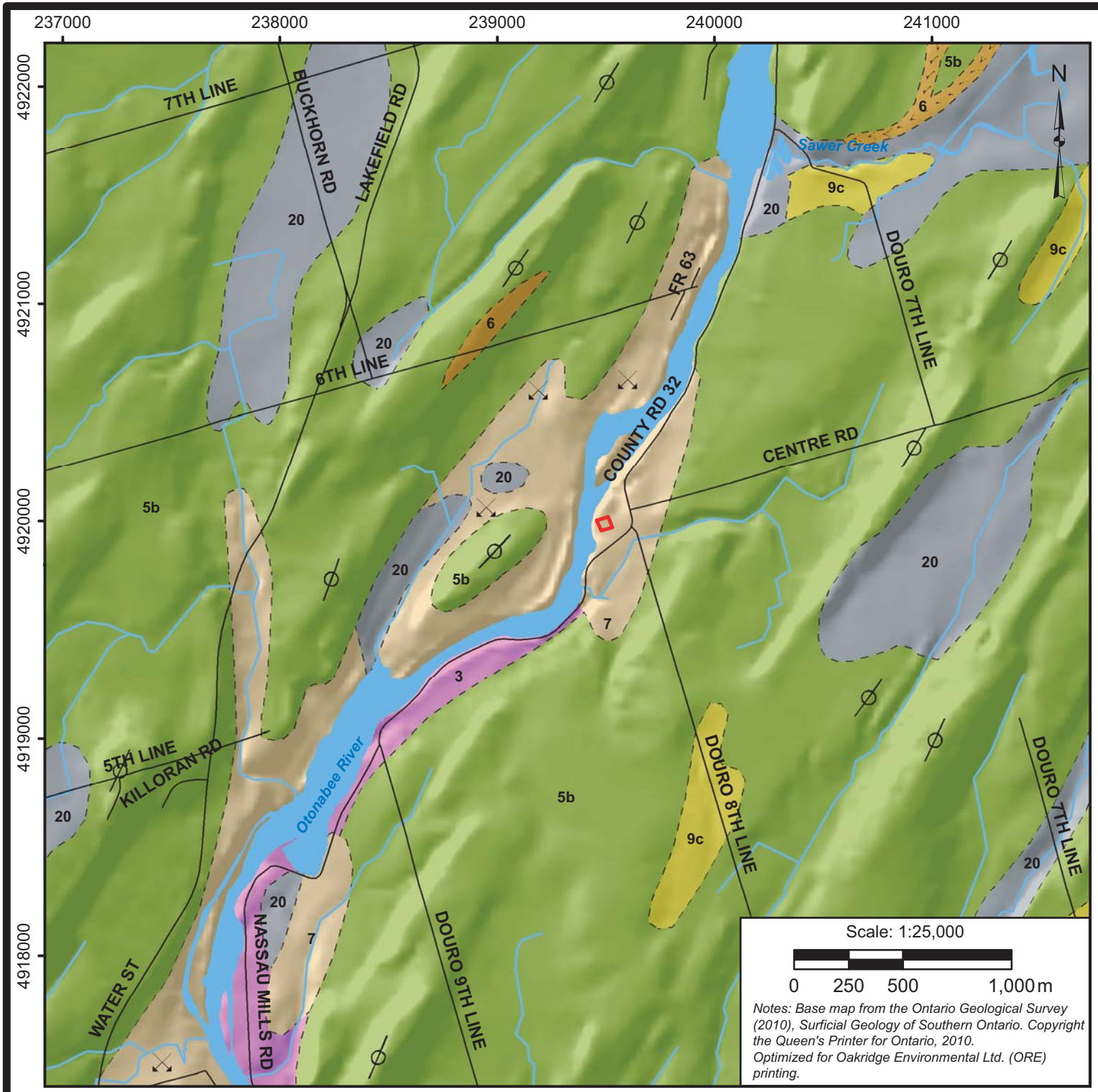
Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

Topography & Drainage

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
21-2979	**2**
DATE: October 2021	



North American Datum 1983 - UTM Zone 17

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

LEGEND

- Approximate Site Boundary
- 3 — Paleozoic bedrock

Glacial Deposits (Till):

- 5b — Stone-poor, carbonate-derived silty to sandy till

Ice-contact Stratified Deposits:

- 6 — Ice-contact stratified deposits

Glaciofluvial Deposits:

- 7 — Glaciofluvial deposits

Coarse-textured Glaciolacustrine Deposits:

- 9c — Foreshore-basinal deposits
- 20 — Organic deposits
- Sand and Gravel Pit
- Drumlin or Drumlinoid Ridges
- Esker (direction of flow known)
- Geological Contact (approximate/assumed)
- Road
- Waterbody
- Watercourse

TITLE

Surficial Geology

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
21-2979	**3**
DATE: October 2021	

North American Datum 1983 - UTM Zone 17

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

LEGEND

- Approximate Site Boundary
- Rural Property (CVR_4)
- Spot Height
- Contour (5 m interval)
- Road

Scale: 1:750

0 5 10 20 m

Notes: Imagery provided by ESRI, Maxar (2019).

Base map provided by Land Information Ontario (2020).

Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

Vegetation

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
21-2979	4
DATE	
October 2021	

Photo A (Left): This photo illustrates the small patch of Eastern White Cedars (*Thuja occidentalis*) that occurs in the area of ponding water, located just west of the western property boundary.

Photo B (Right): Shown here is the large pile of stone that currently occupies the centre of the site. The mowed lawn surrounds this area, and both represent the Rural Property (CVR_4) ecosite designation. The photo was taken looking south-west.

Photo C (Left): This is the view of the property facing east.

Site photos were taken on September 1, 2021.

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

TITLE
Site Photos

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 21-2979

DATE October 2021

FIGURE NO. **5**

Photo D (Left): This is the view looking north. The existing laneway that leads to Centre Road is visible, as is the existing culvert and drainage ditch.

Photo E (Right): This photo was taken facing southwest. The Otonabee River is slightly visible through the clearing in the trees.

Site photos were taken on September 1, 2021.

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

TITLE
Site Photos

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT # 21-2979

DATE October 2021

FIGURE NO. **6**

North American Datum 1983 - UTM Zone 17

Scoped Environmental Impact Study (sEIS)
Proposed Single Residential Development
4034 Centre Road, Bolton Corners
Part Lot 10, Concession 9 (Douro)
Township of Douro-Dummer
County of Peterborough

LEGEND

- Approximate Site Boundary
- Floodline (221.05 m)
- Floodline Setback (6 m)
- Watercourse Setback (30 m)
- Spot Height
- Contour (5 m interval)
- Road

Scale: 1:750

0 5 10 20 m

Notes: Imagery provided by ESRI, Maxar (2019).

Base map provided by Land Information Ontario (2020).

Site Plan provided by M.J. Davenport & Associates Limited (April 2021).

Floodline provided by Site Plan (April 2021).

Optimized for Oakridge Environmental Ltd. (ORE) printing.

TITLE

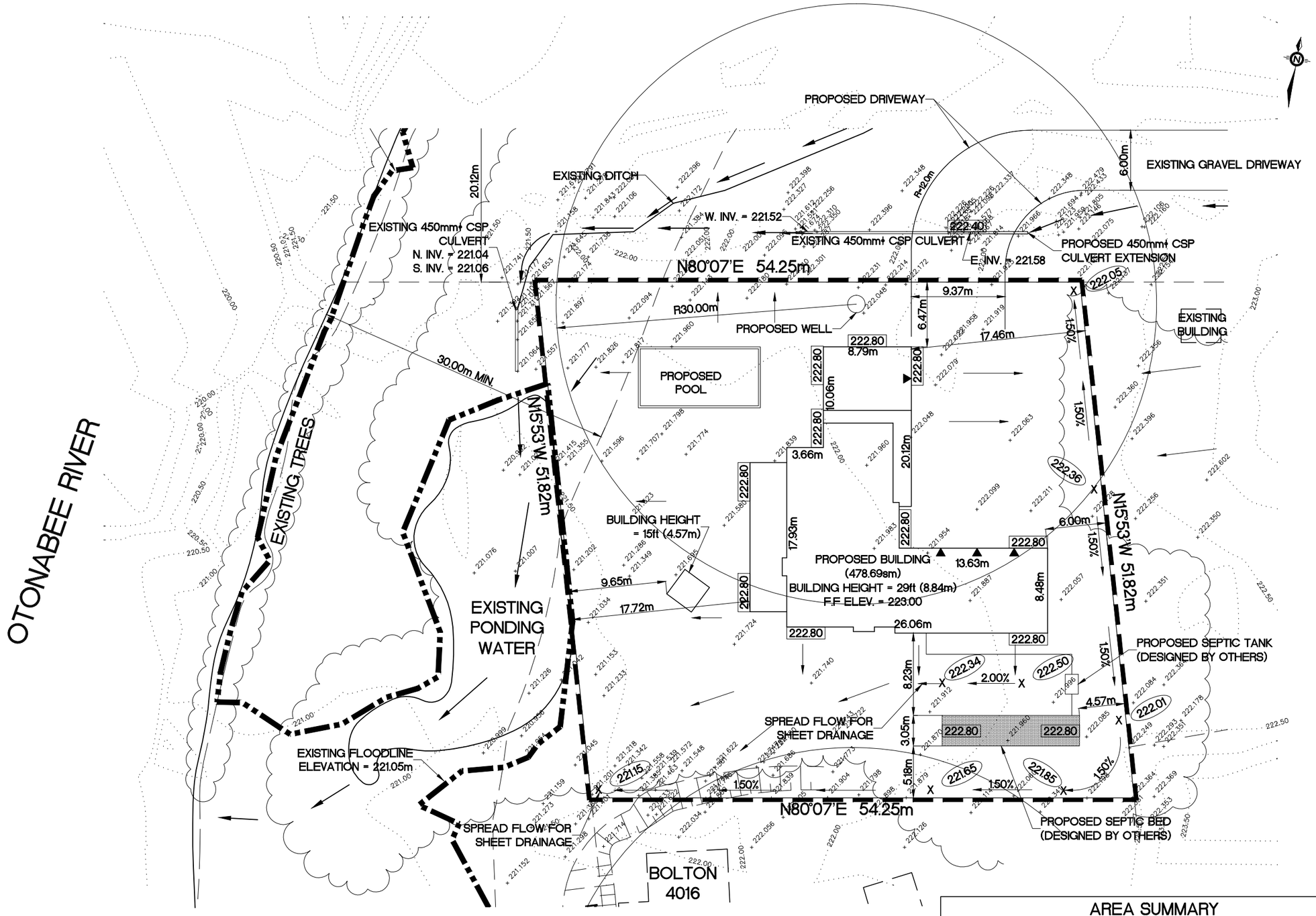
Constraints

ORE Oakridge Environmental Ltd.
Environmental and Hydrogeological Services

PROJECT #	FIGURE NO.
21-2979	7
DATE	
October 2021	

Appendix A

Proponent's Site Plan



0.15m (MIN.)
3:1 (MAX.)

TYPICAL SWALE SECTION

NOTE:

1. THIS DRAWING MUST NOT BE INTERPRETED AS A LOCATION SURVEY PREPARED BY AN ONTARIO LAND SURVEYOR. THIS DRAWING IS FOR GRADING ONLY.

2. SWALE GRADE ALONG PROPERTY LINES ARE EXISTING AND SHALL NOT BE MODIFIED DURING CONSTRUCTION WITHOUT WRITTEN CONSENT FROM THE ADJACENT PROPERTY OWNER.

AREA SUMMARY

DESCRIPTION	AREA (sq.m)	COVERAGE (%)	BYLAW
DWELLING	478.69	17.1%	15.0%
LANDSCAPE	2,317.16	82.9%	
TOTAL	2,795.85	100%	

KEY PLAN

NO.	REVISIONS	DATE	BY	APP'D

BENCHMARKS

BM 1 ELEV. 224.784 (CGVD2978)

BRASS CAP ON THE CONCRETE OF EAST SIDE OF LOCK 24.
BENCHMARK No. 72U414

LEGEND

- 100.00 — PROPOSED ELEVATION
- (100.00) — PROPOSED SWALE ELEVATION
- → — PROPOSED DRAINAGE
- 3R ▼ — PROPOSED NUMBER OF 200mm RISERS
- ⟨100.00⟩ — EXISTING SWALE ELEVATION
- * 100.00 — EXISTING ELEVATION TO REMAIN UNCHANGED

M.J. DAVENPORT
& ASSOCIATES LIMITED
P.O. BOX 2452 STN MAIN, PETERBOROUGH, ONTARIO K9J 7Y8
TEL. : (705) 745-6676
FAX : (705) 745-7326

PATERSON & CARRINGTON

4034 CENTRE ROAD, BOLTONS CORNERS
LOT 10 CONCESSION IX
TOWNSHIP OF DOURO
TOWNSHIP OF DOURO DUMMER
COUNTY OF PETERBOROUGH

SITE PLAN

DESIGNED BY: M. J. DAVENPORT	SCALE: 1 : 300
DRAWN BY: J. ZHOU	
DATE: APRIL, 2021	DRWG. NO.: 5883-02B
PROJECT NO.: 21-D-5883	

Appendix B

NHIC Data

Make A Map: Natural Heritage Areas

Ministry of Natural Resources and Forestry

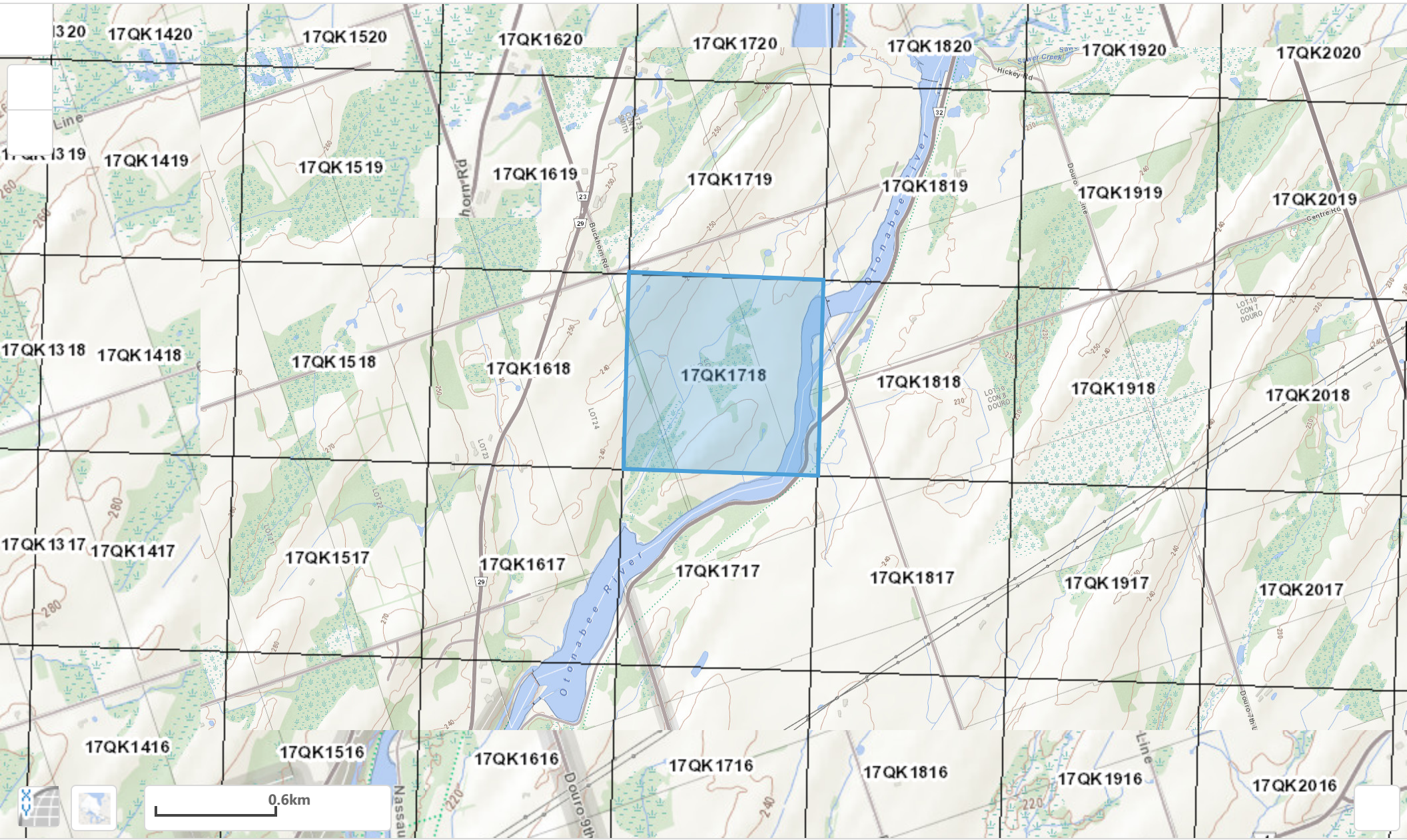
Looking for a Park, Reserve or Wetland? Enter the name here

français

Home | Navigation | Find Data | Markup and Printing

Tool Labels

Bookmarks | Pan | Zoom In | Zoom Out | Initial View | Previous Extent | Next Extent



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
1059012	SPECIES	Midland Painted Turtle	Chrysemys picta marginata			SC	17QK1718	
1059012	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17QK1718	
1059012	SPECIES	Bobolink	Dolichonyx oryzivorus		THR	THR	17QK1718	
1059012	SPECIES	Northern Map Turtle	Graptemys geographica		SC	SC	17QK1718	
1059012	SPECIES	Snapping Turtle	Chelydra serpentina		SC	SC	17QK1718	

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

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

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

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

Appendix C

OBBA Data

BIRDS CANADA
OISEAUX CANADA

Square Summary (17TQK11) [change]

	#species				#hours		#pc done	
	poss	prob	conf	total	total	peak	road	offrd
Curr.	15	46	48	109	126.7	48.2	19	2
Prev.	18	33	63	114	115.2	—	26	

Region summary (#16: Peterborough, ON)

#squares	#sq with data	#species	#squares (pc)	
			target	compl.
60	57	185	60	4
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 2, Shrubland in 1, Wetland in 1). 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:** [02, 03, 05, 14, 20, 22, 25, 26, 27, 28, 29, 31, 32, 34, 35, 36, 38, 39, 40]

SPECIES	Prev.	Code	%
Canada Goose	AE	AE	71
Mute Swan ‡			3
Trumpeter Swan		P	19
Wood Duck	FY	FY	71
Blue-winged Teal ‡	FY		12
Northern Shoveler ‡			3
Gadwall ‡			0
American Wigeon ‡			0
Mallard	FY	P	68
American Black Duck		H	3
Northern Pintail ‡			0
Green-winged Teal ‡	P		1
Redhead †			0
Ring-necked Duck			17
Lesser Scaup ‡			0
Hooded Merganser			45
Common Merganser ‡	P		15
Ruddy Duck ‡			0

Ring-necked Pheasant ‡			0
Ruffed Grouse	FY	FY	73
Wild Turkey	H	D	66
Pied-billed Grebe	T		5
Rock Pigeon (Feral Pigeon)	AE	CF	38
Mourning Dove	FY	NY	71
Yellow-billed Cuckoo		S	45
Black-billed Cuckoo	CF	T	66
Common Nighthawk §		H	21
Eastern Whip-poor-will §			31
Chimney Swift ‡		T	8
Ruby-throated Hummingbird	D	A	52
Virginia Rail	NE	T	40
Sora	NY		14
Common Gallinule ‡	NE		10

SPECIES	**Prev.**	**Code**	**%**
American Coot ‡			3
Sandhill Crane ‡			22
Killdeer §	NE	NE	47
Upland Sandpiper †	S	T	5
American Woodcock	S	D	38
Wilson's Snipe	FY	T	40
Spotted Sandpiper	T	D	29
Ring-billed Gull § ‡			7
Herring Gull §			19
Caspian Tern ‡			0
Black Tern †	NE		3
Common Tern § ‡			0
Common Loon	P	P	59
Double-crested Cormorant § ‡			12
American Bittern	S	H	35
Least Bittern †	NY	T	19
Great Blue Heron §		NY	50
Green Heron §	T	A	33
Turkey Vulture	FY	H	71
Osprey	NY	CF	45
Northern Harrier	T	H	22
Sharp-shinned Hawk	H	D	7
Cooper's Hawk	AE	D	14
Northern Goshawk ‡			1
Bald Eagle ‡			5
Red-shouldered Hawk			17

SPECIES	Prev.	Code	%
Broad-winged Hawk		T	63
Red-tailed Hawk	NY	NY	38
Eastern Screech-Owl		H	8
Great Horned Owl ‡	NY	S	12
Barred Owl			31
Long-eared Owl ‡			3
Short-eared Owl †			0
Northern Saw-whet Owl			1
Belted Kingfisher	CF	S	78
Yellow-bellied Sapsucker	NY	A	89
Red-headed Woodpecker †			5
Red-bellied Woodpecker		T	33
Black-backed Woodpecker ‡			1
Downy Woodpecker	FY	CF	71
Hairy Woodpecker	FY	NY	78
Pileated Woodpecker	N	T	78
Northern Flicker	T	FY	78
American Kestrel §	P	T	36
Merlin	FY	P	29
Peregrine Falcon ‡			0
Olive-sided Flycatcher ‡			8
Eastern Wood-Pewee §	FY	T	78
Yellow-bellied Flycatcher ‡			0
Alder Flycatcher	FY	T	78
Willow Flycatcher	T	S	29
Least Flycatcher	NE	T	63
Eastern Phoebe	FY	T	84
Great Crested Flycatcher	CF	NB	82
Eastern Kingbird	CF	NY	77
Yellow-throated Vireo			21
Blue-headed Vireo	T		45
Philadelphia Vireo ‡			1
Warbling Vireo	T	FY	56
Red-eyed Vireo	T	CF	92
Loggerhead Shrike †			0
Canada Jay ‡			0
Blue Jay	NY	CF	94
American Crow	NY	FY	84
Common Raven		CF	91
Black-capped Chickadee	FY	NE	98

SPECIES	Prev.	Code	%
Boreal Chickadee ‡			0
Horned Lark ‡	S		5
Northern Rough-winged Swallow	AE	CF	15
Purple Martin ‡	S		0
Tree Swallow	AE	AE	57
Bank Swallow §	H		10
Barn Swallow §	FY	FY	63
Cliff Swallow §	CF	AE	14
Golden-crowned Kinglet			19
Ruby-crowned Kinglet ‡			1
Red-breasted Nuthatch	T	NY	80
White-breasted Nuthatch	T	CF	73
Brown Creeper	T	AE	40
Blue-gray Gnatcatcher ‡			0
House Wren	CF	CF	59
Winter Wren	S	CF	75
Sedge Wren ‡	S	S	7
Marsh Wren	NY	T	40
Carolina Wren ‡	T		1
European Starling	CF	NY	66
Gray Catbird	CF	CF	73
Brown Thrasher	FS	T	61
Northern Mockingbird ‡			0
Eastern Bluebird	N	T	40
Veery	T	T	89
Swainson's Thrush			5
Hermit Thrush			57
Wood Thrush §	T	T	63
American Robin	NY	NY	98
Cedar Waxwing	NE	NE	66
House Sparrow	AE	FS	31
Evening Grosbeak ‡			0
House Finch	T	CF	14

SPECIES	Prev.	Code	%
Purple Finch	S	FY	73
Red Crossbill ‡			5
White-winged Crossbill ‡			3
Pine Siskin ‡	H	H	5
American Goldfinch	CF	D	78
Grasshopper Sparrow §	S	T	21

Chipping Sparrow	FY	CF	82
Clay-colored Sparrow ‡		S	15
Field Sparrow §	FY	T	56
Dark-eyed Junco ‡			5
White-throated Sparrow	T	T	80
Vesper Sparrow	T		15
Savannah Sparrow	T	T	52
Song Sparrow	CF	NE	96
Lincoln's Sparrow ‡			5
Swamp Sparrow	NY	FY	87
Eastern Towhee §		T	43
Bobolink §	T	T	45
Eastern Meadowlark §	T	CF	50
Orchard Oriole ‡			3
Baltimore Oriole	FY	CF	64
Red-winged Blackbird	NY	CF	94
Brown-headed Cowbird	FY	FY	47
Common Grackle	NY	CF	92
Ovenbird	NY	T	85
Northern Waterthrush	T	T	73
Golden-winged Warbler †			12
Blue-winged Warbler ‡			8
Black-and-white Warbler	FY	T	78
Tennessee Warbler ‡			0
Nashville Warbler	S	T	70
Mourning Warbler	S		49
Common Yellowthroat	CF	A	89

SPECIES	**Prev.**	**Code**	**%**
Hooded Warbler ‡			0
American Redstart	T	CF	82
Cape May Warbler ‡			0
Cerulean Warbler †			3
Northern Parula ‡			10
Magnolia Warbler		S	57
Bay-breasted Warbler ‡			0
Blackburnian Warbler	S		35
Yellow Warbler	NY	CF	77
Chestnut-sided Warbler	FY	T	73
Black-throated Blue Warbler			40
Pine Warbler	A	T	82
Yellow-rumped Warbler	T	A	63
Prairie Warbler †			0
Black-throated Green Warbler	T		66

Black-throated Green Warbler	T		66
Canada Warbler §	S		38
Scarlet Tanager	S		75
Northern Cardinal	NY	CF	42
Rose-breasted Grosbeak	CF	NB	82
Indigo Bunting	P	S	73

This list includes all breeding species expected in the region #16 (Peterborough). Underlined species are those that you should try to add to this square (17TQK11). They have not yet been reported in this square, but have been reported in more than 50% of the squares in this region so far. "Prev." is the code for the highest breeding evidence for that species in square 17TQK11 in the previous atlas. "Code" is the code for the highest breeding evidence for that species in square 17TQK11 over the last 5 years. The % columns give the percentage of squares in that region where that species was reported (this gives an idea of the expected chance of finding that species in region #16). Rare/Colonial Species Report Forms should be completed for species marked: § (Species of interest), ‡ (regionally rare), † (provincially rare). An up-to-date version of this sheet is available from https://www.birdscanada.org/birdmon/atlas/summaryform.jsp?squareID=17TQK11&lang=EN
Data current as of **12/08/2021 06:04**.

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

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

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

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

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

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

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

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

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

Appendix D

eBird Data

Otonabee River--between Lock 24 and 25

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=L1862778&yr=all&m=)

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

Hotspot navigation

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

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

VIEW MY...

My eBird (/myebird/L1862778)

Life List (/lifelist/L1862778)

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

Checklists (/mychecklists/L1862778)

EXPLORE...

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

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

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

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

107
Species observed (/hotspot/L1862778?yr=all&m=)

511
Complete checklists (/hotspot/L1862778/activity?yr=all&m=)

Sightings

Updated 3 sec ago.

Last seen (/hotspot/L1862778?yr=all&m=&rank=mrec) **First seen (/hotspot/L1862778?yr=all&m=&rank=lrec)**

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

Show all details Sort by

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

1. **Green Heron(/species/grnher/L1862778)**
   # 1 | 9 Jul 2021 (/checklist/S91502498) | Luke Berg
2. **Blue Jay(/species/blujay/L1862778)**
   # 2 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
3. **American Crow(/species/amecro/L1862778)**
   # 1 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
4. **Tree Swallow(/species/treswa/L1862778)**
   # 1 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
5. **Chipping Sparrow(/species/chispa/L1862778)**
   # 1 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
6. **Baltimore Oriole(/species/balori/L1862778)**
   # 1 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
7. **Red-winged Blackbird(/species/rewbla/L1862778)**
   # 1 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
8. **Common Grackle(/species/comgra/L1862778)**
   # 2 | 13 Jun 2021 (/checklist/S90191110) | Dave Milsom
9. **Turkey Vulture(/species/turvul/L1862778)**
   # 2 | 30 May 2021 (/checklist/S89275185) | paul mathers
10. **Alder Flycatcher(/species/aldfly/L1862778)**
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers
11. **Eastern Kingbird(/species/easkin/L1862778)**
    # 2 | 30 May 2021 (/checklist/S89275185) | paul mathers
12. **Red-eyed Vireo(/species/reevir1/L1862778)**
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers
13. **Black-capped Chickadee(/species/bkcchi/L1862778)**
    # 2 | 30 May 2021 (/checklist/S89275185) | paul mathers
14. **Gray Catbird(/species/grycat/L1862778)**
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers
15. **American Robin(/species/amerob/L1862778)**
    # 6 | 30 May 2021 (/checklist/S89275185) | paul mathers
16. **Cedar Waxwing(/species/cedwax/L1862778)**
    # 3 | 30 May 2021 (/checklist/S89275185) | paul mathers
17. **American Goldfinch(/species/amegfi/L1862778)**
    # 2 | 30 May 2021 (/checklist/S89275185) | paul mathers
18. **White-throated Sparrow(/species/whtspa/L1862778)**
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers

19. **Brown-headed Cowbird(/species/bnhcow/L1862778)**
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers

20. **American Redstart(/species/amered/L1862778)**
    # 2 | 30 May 2021 (/checklist/S89275185) | paul mathers

21. **Yellow Warbler(/species/yelwar/L1862778)**
    # 4 | 30 May 2021 (/checklist/S89275185) | paul mathers

    warbler sp. (Parulidae sp.)
    # 1 | 30 May 2021 (/checklist/S89275185) | paul mathers

22. **Warbling Vireo(/species/warvir/L1862778)**
    # 1 | 22 May 2021 (/checklist/S88782402) | David Britton

23. **Double-crested Cormorant(/species/doccor/L1862778)**
    # 1 | 10 May 2021 (/checklist/S87759295) | Mike Coyne

24. **Osprey(/species/osprey/L1862778)**
    # 1 | 10 May 2021 (/checklist/S87759295) | Mike Coyne

25. **Hooded Merganser(/species/hoomer/L1862778)**
    # 1 | 1 May 2021 (/checklist/S86799589) | Luke Berg

26. **Great Blue Heron(/species/grbher3/L1862778)**
    # 1 | 1 May 2021 (/checklist/S86799589) | Luke Berg

27. **Song Sparrow(/species/sonspa/L1862778)**
    # 1 | 1 May 2021 (/checklist/S86799589) | Luke Berg

28. **Mallard(/species/mallar3/L1862778)**
    # 2 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

29. **Bufflehead(/species/buffle/L1862778)**
    # 2 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

30. **Ring-billed Gull(/species/ribgul/L1862778)**
    # 1 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

31. **Northern Rough-winged Swallow(/species/nrwswa/L1862778)**
    # 1 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

32. **Bank Swallow(/species/banswa/L1862778)**
    # 2 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

33. **Barn Swallow(/species/barswa/L1862778)**
    # 1 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

34. **European Starling(/species/eursta/L1862778)**
    # 3 | 20 Apr 2021 (/checklist/S85988243) | Dave Milsom

35. **Canada Goose(/species/cangoo/L1862778)**
    # 10 | 5 Apr 2021 (/checklist/S84859703) | Ken Abraham

36. **Belted Kingfisher(/species/belkin1/L1862778)**
    # 1 | 5 Apr 2021 (/checklist/S84859703) | Ken Abraham

37. **Pied-billed Grebe(/species/pibgre/L1862778)**
    # 1 | 25 Mar 2021 (/checklist/S84058785) | Lynne Cotton

38. **Herring Gull(/species/hergul/L1862778)**
    # 1 | 24 Mar 2021 (/checklist/S84090713) | Henrique Pacheco

39. **White-breasted Nuthatch(/species/whbnut/L1862778)**
    # 1 | 24 Mar 2021 (/checklist/S84090713) | Henrique Pacheco

40. **American Tree Sparrow(/species/amtspa/L1862778)**
    # 3 | 24 Mar 2021 (/checklist/S84090713) | Henrique Pacheco

41. **Eastern Meadowlark(/species/easmea/L1862778)**
    # 1 | 24 Mar 2021 (/checklist/S84090713) | Henrique Pacheco

42. **Mourning Dove(/species/moudov/L1862778)**
    # 1 | 23 Mar 2021 (/checklist/S83946998) | Donald A. Sutherland

43. **Killdeer(/species/killde/L1862778)**
    # 1 | 22 Mar 2021 (/checklist/S83885169) | Laurie Healey

44. **Common Raven(/species/comrav/L1862778)**
    # 1 | 22 Mar 2021 (/checklist/S83885169) | Laurie Healey

45. **Common Goldeneye(/species/comgol/L1862778)**
    # 2 | 18 Mar 2021 (/checklist/S83633962) | Scott McKinlay

46. **Dark-eyed Junco(/species/daejun/L1862778)**
    # 2 | 18 Mar 2021 (/checklist/S83632379) | Dave Milsom

47. **Wood Duck(/species/wooduc/L1862778)**
    # 1 | 14 Mar 2021 (/checklist/S83414286) | Dave Milsom

48. **Common Merganser(/species/commer/L1862778)**
    # 2 | 11 Mar 2021 (/checklist/S83194162) | Lynne Cotton

49. **American Black Duck(/species/ambduc/L1862778)**
    # 1 | 3 Mar 2021 (/checklist/S82983021) | Martin Parker

50. **Northern Cardinal(/species/norcar/L1862778)**
    # 1 | 1 Mar 2021 (/checklist/S82576846) | Donald A. Sutherland

51. **Northern Shrike(/species/norshr4/L1862778)**
    # 1 | 27 Feb 2021 (/checklist/S82432677) | C Douglas

52. **Trumpeter Swan(/species/truswa/L1862778)**
    # 2 | 19 Feb 2021 (/checklist/S81953701) | Milda Bax

53. **Red-tailed Hawk(/species/rethaw/L1862778)**
    # 1 | 11 Feb 2021 (/checklist/S80822456) | Hannah Dodington

54. **Tundra Swan(/species/tunswa/L1862778)**
    # 1 | 25 Jan 2021 (/checklist/S79871909) | Matthew Garvin

55. **Bald Eagle(/species/baleag/L1862778)**
    # 1 | 21 Jan 2021 (/checklist/S79687100) | Marilyn Hubley

56. **Wild Turkey(/species/wiltur/L1862778)**
    # 12 | 12 Jan 2021 (/checklist/S79190906) | Anonymous eBirder

57. **Rock Pigeon(/species/rocpig/L1862778)**
    # 1 | 3 Jan 2021 (/checklist/S78600677) | Iain Rayner

58. **House Sparrow(/species/houspa/L1862778)**
    # 2 | 3 Jan 2021 (/checklist/S78600677) | Iain Rayner

59. **Common Redpoll(/species/comred/L1862778)**
    # 120 | 1 Jan 2021 (/checklist/S78406929) | Luke Berg

60. **Cooper's Hawk(/species/coohaw/L1862778)**
    # 1 | 6 Dec 2020 (/checklist/S77159902) | Iain Rayner

61. **Sandhill Crane(/species/sancra/L1862778)**
    # 8 | 5 Sep 2020 (/checklist/S73211208) | Kathryn Sheridan

62. **Merlin(/species/merlin/L1862778)**
    # 1 | 19 Aug 2020 (/checklist/S72574029) | Sarah Bonnett

63. **House Wren(/species/houwre/L1862778)**
    # 2 | 11 Aug 2020 (/checklist/S72313852) | Carling Dewar

64. **Common Loon(/species/comloo/L1862778)**
    # 1 | 8 Jun 2020 (/checklist/S70217432) | Connor Thompson

65. **Broad-winged Hawk(/species/brwhaw/L1862778)**
    # 1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

66. **Downy Woodpecker(/species/dowwoo/L1862778)**
    # 1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

67. **Eastern Phoebe(/species/easpho/L1862778)**
    # 1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

68. **Ruby-crowned Kinglet(/species/ruckin/L1862778)**
    # 2 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

69. **Swamp Sparrow(/species/swaspa/L1862778)**
    # 1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

70. **Pine Warbler(/species/pinwar/L1862778)**
    # 1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

71. **Yellow-rumped Warbler(/species/yerwar/L1862778)**

1 | 1 May 2020 (/checklist/S68193073) | Travis Cameron

72. **Yellow-bellied Sapsucker(/species/yebsap/L1862778)**
1 | 27 Apr 2020 (/checklist/S67911563) | Matthew Garvin

73. **Golden-crowned Kinglet(/species/gockin/L1862778)**
1 | 27 Apr 2020 (/checklist/S67911563) | Matthew Garvin

74. **Northern Waterthrush(/species/norwat/L1862778)**
1 | 27 Apr 2020 (/checklist/S67911563) | Matthew Garvin

75. **Wilson's Snipe(/species/wilsni1/L1862778)**
1 | 13 Apr 2020 (/checklist/S67142212) | Donald A. Sutherland

76. **Savannah Sparrow(/species/savspa/L1862778)**
1 | 13 Apr 2020 (/checklist/S67142212) | Donald A. Sutherland

77. **Pileated Woodpecker(/species/pilwoo/L1862778)**
2 | 21 May 2019 (/checklist/S56637161) | Joe Dziedzina

78. **Brown Thrasher(/species/brnthr/L1862778)**
3 | 3 May 2019 (/checklist/S55720502) | Derek Neumann and/or Michael Schmidt

79. **Nashville Warbler(/species/naswar/L1862778)**
1 | 3 May 2019 (/checklist/S55720502) | Derek Neumann and/or Michael Schmidt

80. **Black-throated Green Warbler(/species/btnwar/L1862778)**
1 | 3 May 2019 (/checklist/S55720502) | Derek Neumann and/or Michael Schmidt

gull sp.
1 | 21 Apr 2019 (/checklist/S55237810) | Iain Rayner

81. **Ring-necked Duck(/species/rinduc/L1862778)**
4 | 13 Apr 2019 (/checklist/S54899769) | C Douglas

82. **Hairy Woodpecker(/species/haiwoo/L1862778)**
1 | 2 Apr 2019 (/checklist/S54484055) | C Douglas

83. **Red-bellied Woodpecker(/species/rebwoo/L1862778)**
1 | 16 Mar 2019 (/checklist/S53892262) | Anonymous eBirder

84. **Long-tailed Duck(/species/lotduc/L1862778)**
2 | 9 Mar 2019 (/checklist/S53638142) | C Douglas

85. **Red-necked Grebe(/species/rengre/L1862778)**
1 | 8 Mar 2019 (/checklist/S53607092) | Ben Taylor

Bohemian/Cedar Waxwing
30 | 5 Feb 2019 (/checklist/S52408446) | C Douglas

86. **Caspian Tern(/species/caster1/L1862778)**
2 | 25 Aug 2018 (/checklist/S49847132) | Alain Parada Isada

87. **Least Flycatcher(/species/leafly/L1862778)**

1 | 2 Jun 2018 (/checklist/S46233730) | Colin Jones

88. **Cliff Swallow(/species/cliswa/L1862778)**
3 | 19 May 2018 (/checklist/S45827610) | Mike V.A. Burrell

Larus sp.
1 | 8 Feb 2017 (/checklist/S34241416) | Scott Gibson

89. **Red-breasted Nuthatch(/species/rebnut/L1862778)**
1 | 9 Jan 2017 (/checklist/S33568741) | Chris Cordy

90. **Northern Flicker(/species/norfli/L1862778)**
1 | 18 Sep 2016 (/checklist/S31641542) | Dave Milsom

91. **Black-throated Blue Warbler(/species/btbwar/L1862778)**
1 | 18 Sep 2016 (/checklist/S31641542) | Dave Milsom

92. **Pine Siskin(/species/pinsis/L1862778)**
6 | 23 Apr 2016 (/checklist/S29137325) | Carol Horner

93. **Greater Scaup(/species/gresca/L1862778)**
1 | 7 Mar 2016 (/checklist/S28087204) | Wendy Hogan

94. **Cackling Goose(/species/cacgoo1/L1862778)**
1 | 18 Nov 2015 (/checklist/S38112009) | John Bick

95. **American Kestrel(/species/amekes/L1862778)**
1 | 21 Sep 2015 (/checklist/S25121215) | Bill Crins

96. **Great Crested Flycatcher(/species/grcfly/L1862778)**
1 | 8 Jun 2015 (/checklist/S23876519) | Travis Cameron

97. **Common Yellowthroat(/species/comyel/L1862778)**
1 | 8 Jun 2015 (/checklist/S23876519) | Travis Cameron

98. **Chestnut-sided Warbler(/species/chswar/L1862778)**
1 | 8 Jun 2015 (/checklist/S23876519) | Travis Cameron

99. **Blackpoll Warbler(/species/bkpwar/L1862778)**
1 | 24 May 2015 (/checklist/S23631973) | Donald A. Sutherland

100. **Snow Bunting(/species/snobun/L1862778)**
1 | 24 Mar 2015 (/checklist/S22505418) | Matthew Tobey

101. **Red-breasted Merganser(/species/rebmer/L1862778)**
1 | 25 Feb 2015 (/checklist/S22094744) | Anonymous eBirder

102. **Ross's Goose(/species/rosgoo/L1862778)**
1 | 5 Dec 2014 (/checklist/S38121135) | John Bick

103. **Ruby-throated Hummingbird(/species/rthhum/L1862778)**
1 | 10 May 2014 (/checklist/S18321830) | Tim Haan

104. **Bay-breasted Warbler(/species/babwar/L1862778)**

# 1	10 May 2014 (/checklist/S18321830)	Tim Haan

Common/Red-breasted Merganser

# 8	5 Apr 2014 (/checklist/S17755454)	Mike Stiell

105. **White-winged Scoter(/species/whwsco2/L1862778)**

# 1	28 Jan 2014 (/checklist/S16551310)	Len Manning, III

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Top media UPLOADED IN LAST 30 DAYS

No media submitted

Latest media (https://ebird.org/media/catalog?regionCode=L1862778)

Recent visits

OBSERVER	DATE	SPECIES
Luke Berg	9 Jul 2021 (/checklist/S91502498)	1
Dave Milsom	13 Jun 2021 (/checklist/S90191110)	7
paul mathers	30 May 2021 (/checklist/S89275185)	17
David Britton	22 May 2021 (/checklist/S88782402)	2
Mike Coyne	10 May 2021 (/checklist/S87759295)	2
Luke Berg	1 May 2021 (/checklist/S86799589)	4
Dave Milsom	20 Apr 2021 (/checklist/S85988243)	12
Ken Abraham	5 Apr 2021 (/checklist/S84859703)	8

Checklists submitted within the last hour are not shown.

More recent visits (/hotspot/L1862778/activity?yr=all&m=)

Top eBirders

Updated 3 sec ago.

Species (/hotspot/L1862778?yr=all&m=&sortBy=spp) **Checklists (/hotspot/L1862778?yr=all&m=&sortBy=cl)**

1	Donald A. Sutherland	51
2	Travis Cameron	48
3	Mike V.A. Burrell	39
4	Iain Rayner	38
5	Dave Milsom	37
6	C Douglas	36

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

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

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

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

Appendix E

Species List

Species Occurrences

Amphibians

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Pickerel Frog	Lithobates palustris	S4	NAR	NAR
Green Frog	Lithobates clamitans	S5		

Birds

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Blue Jay	Cyanocitta cristata	S5		
Black-capped Chickadee	Poecile atricapillus	S5		
White-breasted Nuthatch	Sitta carolinensis	S5		
Northern Cardinal	Cardinalis cardinalis	S5		
Common Grackle	Quiscalus quiscula	S5B		
European Starling	Sturnus vulgaris	SNA		

Mammals

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Striped Skunk	Mephitis mephitis	S5		
Red Fox	Vulpes vulpes	S5		
Eastern Cottontail	Sylvilagus floridanus	S5		
Eastern Chipmunk	Tamias striatus	S5		
Eastern Gray Squirrel	Sciurus carolinensis	S5		
Meadow Vole	Microtus pennsylvanicus	S5		

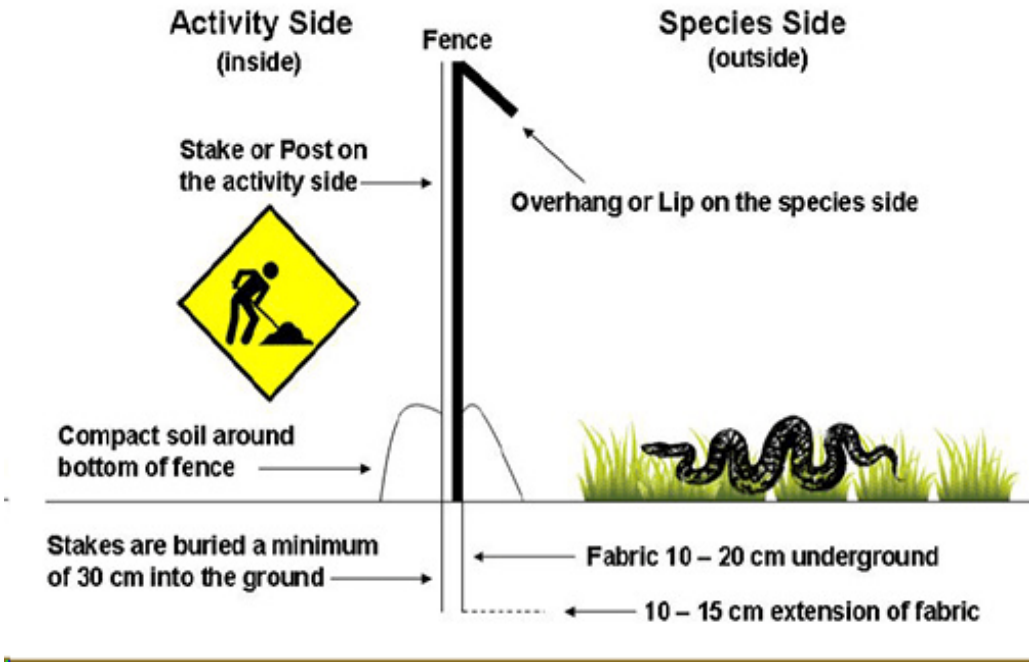
Vascular Plants

COMMON NAME	SCIENTIFIC NAME	SRANK	COSEWIC	SARO
Wild Carrot	Daucus carota	SNA		
Nodding Beggarticks	Bidens cernua	S5		
Canada Goldenrod	Solidago canadensis var. canadensis	S5		
Palmate Coltsfoot	Petasites frigidus var. palmatus	S5		
Common Yarrow	Achillea millefolium	SNA		
Perennial Ragweed	Ambrosia psilostachya	SNA		
Oxeye Daisy	Leucanthemum vulgare	SNA		
Common Dandelion	Taraxacum officinale	SNA		
Common Hawkweed	Hieracium vulgatum	SNA		
Common Burdock	Arctium minus	SNA		
Black Medic	Medicago lupulina	SNA		

Alfalfa	Medicago sativa ssp. sativa	SNA
Red Clover	Trifolium pratense	SNA
Common Evening Primrose	Oenothera biennis	S5
Eastern White Cedar	Thuja occidentalis	S5
Common Plantain	Plantago major	SNA
Spotted Lady's-thumb	Persicaria maculosa	SNA
Curly Dock	Rumex crispus	SNA
Common Goatsbeard	Aruncus dioicus	SNA
Trembling Aspen	Populus tremuloides	S5
Staghorn Sumac	Rhus typhina	S5
Eastern Poison Ivy	Toxicodendron radicans var. radicans	S5
Common Mullein	Verbascum thapsus	SNA
Broad-leaved Cattail	Typha latifolia	S5

Appendix F

Turtle Exclusion Fence


Activity Side
(inside)
Fence
Species Side
(outside)
Stake or Post on
the activity side
Overhang or Lip on the species side
Compact soil around
bottom of fence
Stakes are buried a minimum
of 30 cm into the ground
Fabric 10 – 20 cm underground
10 – 15 cm extension of fabric