65 Melrose Ave.
Barrie, ON L4M 2B1
705.718.6153
www.rootsenvironmental.ca

March 11, 2022

John & Pat Hargreaves
19 Dundonald Street
Barrie, ON L4M 3S9

RE: Scoped Environmental Impact Study
19 Dundonald Street
City of Barrie

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1. Introduction

The following is provided as a Scoped Environmental Impact Study (SEIS) in support of planning applications to permit multi-unit residential development at 19 Dundonald Street in the City of Barrie as shown on *Figure 1 – Property Location*.

Figure 1: Property Location

The subject lands include 99.0 metres of frontage along Dundonald Street and have an area of 3,880 m2 (0.38 ha). The lands are bounded by Dundonald Street to the west, a Municipal ROW (20 m.) to the east and north-east. The northern portion of the subject property currently contains a residence, outbuildings, amenity area and a driveway from Dundonald Street. The southern part of the property is wooded and vacant.

The proposed development as shown on *Figure 2 – Conceptual Site Plan*, will include a 9-storey condominium building with underground parking, additional at-grade parking, amenity area and two entrances from Dundonald Street.

An Environmental Impact Study (EIS) was completed for a severance on the property in 2014. It is our understanding that the severance was granted by the City of Barrie to permit residential development. Kyle Fleming (formerly of Skelton, Brumwell, now with Roots Environmental) completed the 2014 EIS. Per Lake Simcoe Region Conservation Authority (LSRCA) requirements, that report has been deemed outdated (> 5years).

The subject property is currently designated Residential by Schedule A – Land Use in the City of Barrie Official Plan. Schedule H – Natural Heritage Resources identifies an overlay of Level 3 Resource within the south part of the property, corresponding to existing woodland cover. Per Official Plan section 3.5.2.4 (a) (iii), "*An EIS will be required to be completed for any development or site alteration in or within 30 metres of an area identified as Level 3 on Schedule H*."

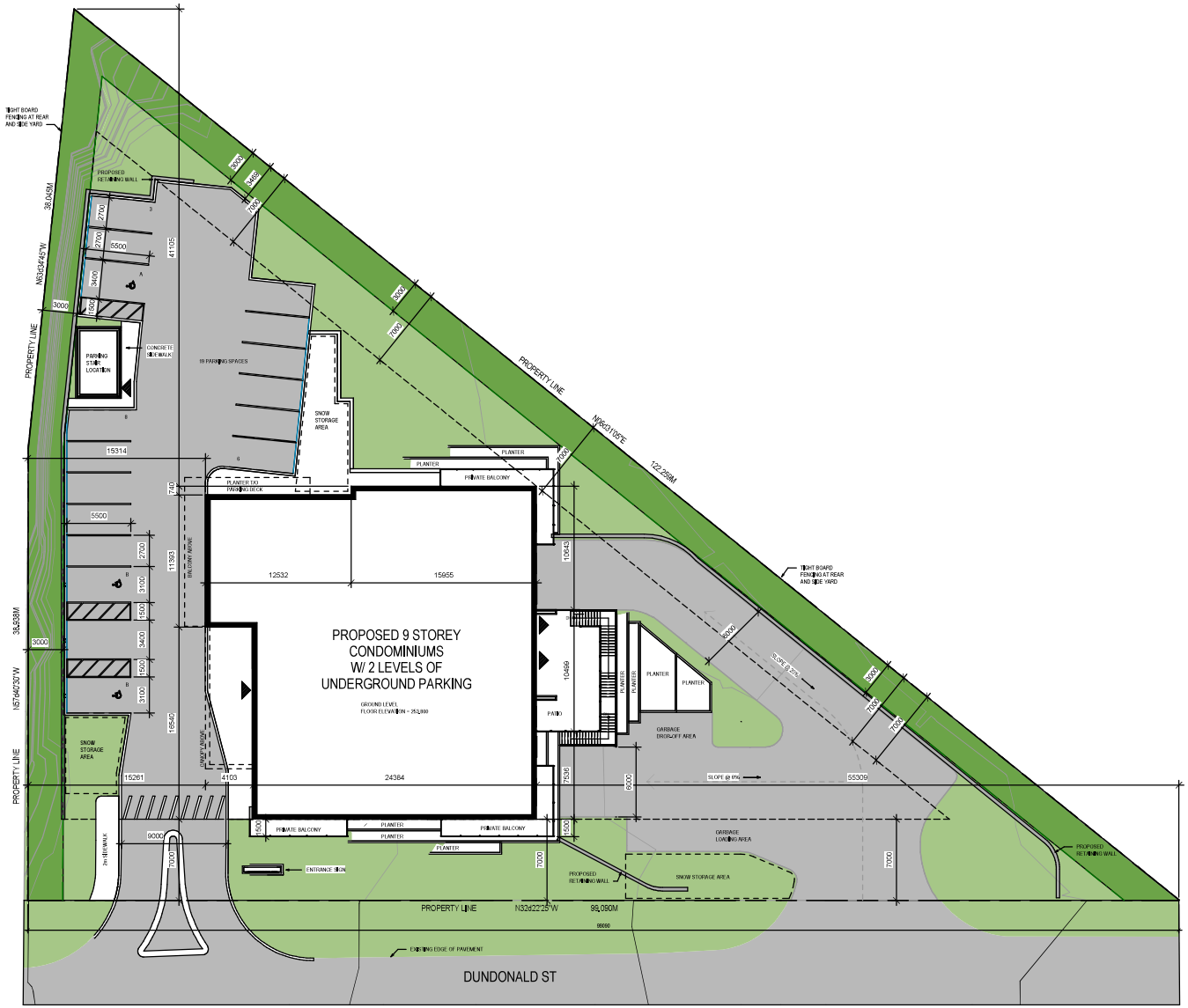
The purpose of this SEIS is to identify natural heritage features on the property or adjacent lands of 120 (Study Area), demonstrate no negative impacts to those features, and ensure compliance with applicable municipal/provincial policies and legislation.

2. Methodology

2.1. Consultation with Agencies

Pre-consultation and technical review comments were provided from the City of Barrie and LSRCA. City of Barre Technical Review Comments (Consolidated) (December 13, 2019) stated:

> *"The applicant shall submit a Scoped Environmental Impact Study (EIS) to establish the development limits on the site to the satisfaction of the City and the LSRCA. Generally, the Terms of Reference for the Scoped EIS shall be as follows:*
>
> - *Background document review for any known natural heritage features;*
> - *Slope stability investigation;*
> - *A single visit to document existing conditions, including: Ecological Land Classification (ELC) of vegetation communities; and a winter survey to identify the presence of any butternut trees;*
> - *Identification of a suitable development limit;*
> - *Assessment/Discussion of potential impacts to Significant Woodlands and their ecological functions; and*



1 / A1.1 SITE PLAN NOTATION

1 : 175

BUILDING/SITE INFO:
Suites on Ground Floor = 2
Suites per Typical Floor = 7
Suites on Ninth Floor = 7
Total Suites = 58

Parking Spaces = 99

Storeys = 9
Building Height = 27.6m
Building Area = 742m2
GFA = 6,678m2

3m LANDSCAPE BUFFER = — · — · —

RA1-2 ZONING TABLE		
	REQUIRED	PROPOSED
LOT AREA (MIN.)	1,100m2	3,880.2m2
LOT FRONTAGE (MIN.)	24m	90m
FRONT YARD (MIN.)	7m	7m
PARKING STRUCTURE SETBACK FROM STREET LINE (MIN.)	0.0m	7m
INTERIOR SIDE YARD (MIN.)	5m	15.3m (North)
REAR YARD (MIN.)	7m	>7m (Measured to the rear extent/back of the lot)
DWELLING UNIT AREA (MIN.)	35m2+10m2/bedroom	<3bed=70m2/bedroom
LOT COVERAGE (MAX.)	35%	19.2%
PARKING AREA COVERAGE (MAX.)	35%	23.6%
%OF PARKING AREA IN THE FRONT YARD (MAX.)	20%	0%
LANDSCAPING (MIN.)	35%	56.3%
GFA (MAX.)	100%	111.47%
BUILDING HEIGHT (MAX.)	30m	27.4m
PARKING (MIN.)	1.5 spaces/unit = 85 spaces @ 2.7m x 5.5m (Including 3 BF spaces)	1.70 spaces/unit = 99 spaces @ 2.7m x 5.5m (Including 4 BF spaces)
DRIVE AISLE WIDTH (MIN.)	6.4m	6.4m
BARRIER FREE (MIN.)	1 Type A space @ 3.4m x 5.5m & 2 Type B space @ 2.1m x 5.5m Each barrier-free space shall contain a 1.5m access aisle	2 Type A space @ 3.4m x 5.5m & 2 Type B space @ 2.1m x 5.5m
LANDSCAPED BUFFER STRIP	3m landscape buffer (sides & rear)	3m
FENCING (MIN.)	2m (tight board fence) *Parking with 4 or more spaces abutting residential zone*	Provided
MAX. DENSITY	150 units per hectare for lands located outside of the City Centre (Official Plan Policy)	149 units per hectare
SECONDARY MEANS OF ACCESS/LANDSCAPED OPEN SPACE	7m	7m
ACCESSORY BUILDING FRONT YARD SETBACKS (MIN.)	7m Not permitted in the front yard	> 7m
ACCESSORY BUILDING REAR & SIDE YARD SETBACKS (MIN.)	0.0m	> 3m both sides and rear
ACCESSORY BUILDING LOT COVERAGE (MAX.)	10%	0.4% - Parking Shed
ACCESSORY BUILDING/STRUCTURE HEIGHT (MAX.)	4m	3.0m

8	RE-ISSUED FOR REZONING #3	DEC 8, 2021
7	RE-ISSUED FOR REZONING #2	SEP 21, 2021
6	CONSULTANT COORDINATION	JAN 21, 2021
5	RE-ISSUED FOR REZONING	NOV 17, 2020
4	ISSUED FOR COORDINATION	OCT 16, 2020
3	FINAL RE-ZONING SUBMISSION	NOV 15, 2019
2	PRELIMINARY DESIGN #2	OCT 29, 2019
1	PRELIMINARY DESIGN	SEPT 9, 2019

ISSUES/REVISIONS

ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON SITE. DISCREPANCIES TO BE REPORTED TO THE ARCHITECT. LATEST APPROVED STAMPED DRAWINGS ONLY TO BE USED FOR CONSTRUCTION.

MCL ARCHITECTS
MCKNIGHT CHARRON LIMITED
48 KILLARNEE BLVD, UNIT 110
BARRIE, ONTARIO L4N 0K3
WWW.MCLARCHITECTS.CA
T 705.722.6730
F 705.726.5418

DRAWING TITLE
SITE PLAN

PROJECT NAME
DUNDONALD ST. PROJECT

19 DUNDONALD ST.
BARRIE, ONTARIO

DATE	OCTOBER 04, 2019	PROJECT #	SHEET #
DRAWN BY	JBL	-	A1.1
SCALE	As indicated		

- *Discussion of Mitigation Measures (i.e. development limits, vegetation retention, timing windows, etc.) to ensure no negative impacts to natural heritage features."*

Per 2022 LSRCA comments, a Terms of Reference for the SEIS has been prepared and submitted to the LSRCA and City of Barrie. The Terms of Reference is attached.

It should be noted that a scoped EIS was submitted to the City of Barrie and LSRCA as part of the Pre-consultation application submission. City comments stated that the subject lands are heavily altered by cultural influences and invasive species, and that there is little to no native ground cover and no forest regeneration present.

2.2. Desktop Review

A desktop review was completed to identify previously known natural features and occurrences of rare species or SAR in the Study Area. Sources included the following:

- The Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) Make A Map: Natural Heritage Areas;
- City of Barrie Official Plan;
- Ontario Nature Reptile and Amphibian Atlas;
- Atlas of Breeding Birds of Ontario; and
- LSRCA Regulation Mapping.

2.3. Site Investigations

Site investigations were completed in 2019/2020 based on the Terms of Reference provided by the City (see above), a preliminary desktop review for the study area, habitats present on site, and the scope of development. Site investigations occurred on July 8, 2019, to identify any potential rare or Species at Risk (SAR) plant species, define vegetation communities using Ecological Land Classification (ELC) for Southern Ontario, First Approximation (Lee et al., 1998), and assess the potential for Significant Wildlife Habitat (SWH) and habitat for SAR wildlife.

A secondary survey was completed on November 11, 2019 to assess trees on the property for potential bat maternity roost habitat, specifically for species at risk bat species (Little Brown Myotis and Northern Myotis). This survey was completed during the leaf-off period to ensure any cavities, snags or loose bark that could provide this habitat was visible.

A subsequent inspection of treed communities was completed on September 3, 2020 with Riverstone Environmental Solutions (Arborist).

3. Existing Conditions

3.1. Desktop Review

3.1.1. MNRF NHIC Make-A-Map: Natural Heritage Areas

A search was completed using the MNRF NHIC Make-A-Map: Natural Heritage Areas online geographic query tool for occurrence square 17PK0516. Occurrences may include those beyond the subject property and on habitats suitable to those species.

This review found occurrences of the following species at risk or rare species:

- Yellow-banded Bumble Bee (*Bombus terricola*) (Special Concern) (SC)
- Chimney Swift (*Chaetura pelagica*) (Threatened) (THR)
- Eastern Meadowlark (*Sturnella magna*) (THR)

No natural features (i.e., Provincially Significant Wetlands, ANSI's) were identified in the MNRF mapping and query. The results of this query is attached.

3.1.2. City of Barrie Official Plan

The City of Barrie Official Plan Schedule H – Natural Heritage Resources identifies the presence of Level 3 resource present in the south part of the site, corresponding to existing woodland cover.

Level 3 resources are identified as the following in the Official Plan:

- Regionally significant life science ANSI
- Woodlands greater than 0.5 ha and less than 4 ha
- Woodlands within 30 metres of a Level 1 or 2 feature
- Cultural thicket or cultural meadow communities contiguous with woodland or wetland patches
- Connectivity linkages

3.1.3. Ontario Nature Reptile and Amphibian Atlas

A geographic query of occurrence square 17PK01 was completed using the Ontario Natural Reptile and Amphibian Atlas for observations of species collected from 1970-2019. Occurrences will include those beyond the subject property and on habitats suitable to those species.

Records for the following Species at Risk were identified:

- Blanding's Turtle (*Emydoidea blandingii*) (THR)
- Northern Map Turtle (*Graptemys geographica*) (SC)
- Snapping Turtle (*Chelydra serpentina*) (SC)
- Five-lined Skink (*Plestiodon fasciatus*) (SC)

Other species noted in the search are common to Ontario. An analysis of habitat potential for these significant species is provided in Section 5. A summary of the search is attached.

3.1.4. Atlas of Breeding Birds of Ontario

A geographic query of occurrence square 17PK01 was completed using the Atlas Breeding Birds of Ontario for observations of species collected from 2001-2005. Documented observations may include those beyond the subject property and on habitats suitable to those species.

Records for the following SAR were identified:

- Common Nighthawk (*Chordeiles minor*) (SC)
- Whip-poor-will (*Antrostomus vociferus*) (THR)
- Chimney Swift (*Chaetura pelagica*) (THR)
- Red-Headed Woodpecker (*Melanerpes erythrocephalus*) (Endangered) (END)
- Eastern Wood-Pewee (*Contopus virens*) (SC)
- Bank Swallow (*Riparia riparia*) (THR)
- Barn Swallow (*Hirundo rustica*) (THR)
- Wood Thrush (*Hylocichla mustelina*) (SC)
- Bobolink (*Dolichonyx oryzivorus*) (THR)
- Eastern Meadowlark (*Sturnella magna*) (THR)

Other species noted in the search are common to Ontario. An analysis of habitat potential for these significant species is provided in Section 5. A summary of the search is attached.

3.1.5. Lake Simcoe Region Conservation Authority Regulation Mapping

The subject property is not regulated under Ontario Regulation 179/06 of the *Conservation Authorities Act.*

3.2. Existing Conditions

The subject property contains an existing residence in the north part with an inground pool and associated outbuildings. Access to the residence is from Dundonald Street.

To the south of the residence is a wooded slope. As shown on *Figure 3 – Existing Conditions* and *Table 1 – Site Photos*, the woodlands are identified using Ecological Land Classification (ELC) as:

Dry-Fresh Oak- Hardwood Deciduous Forest Type (FOD2-4)

Dominant cover within this community is a mix of red oak (*Quercus rubra*), sugar maple (*Acer saccharum)* and white ash (*Fraxinus americana*) with associates of American Beech (*Fagus grandifolium*), basswood (*Tila americana*), and Manitoba maple (*Acer negundo).* Shrub layer included sugar maple, staghom sumac (*Rhus typhina*), Manitoba Maple. Groundcover was limited at the time due to early spring season but included mainly exotic species such as lily-of-the-valley (*Convallaria majalis*), periwinkle (*Vinca minor)*, garlic mustard (*Alliaria petiolate)* and Kentucky blue grass (*Poa pratensis*). The native trout lily (*Erythronium americanum*) is also present.

Additional species noted along the edges of the residence included hard maple, norway maple (*Acer platanoides*), white spruce (*Picea glauca*), ironwood (Ostrya virginiana) common buckthorn (*Rhamnus cathartica*), and basswood.

No butternut trees, SAR or rare species were observed within the woodland or adjacent to the residence. Observations were made of adjacent treed areas to the north and east of the property, but no butternut were found.

A total of four (4) trees were identified as having potential for bat use as maternity roosts. A visual survey was completed of woodland cover on adjacent properties in the north, east and west. Similar woodland structure was present.

4. Natural Heritage Analysis

Identification of natural heritage features is based on the PPS, the MNRF "Natural Heritage Reference Manual" (2nd Edition) (MNRF 2010), City of Barrie Official Plan, "Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E" (MNRF January 2015), and listings and habitat descriptions for species listed in the ESA.

4.1. Significant Wetlands (and Coastal Wetlands)

A review of the MNRF NHIC mapping found no Provincially Significant Wetland on or within 120 metres of the site.

4.2. Other Wetlands (Unevaluated, Non-Provincially Significant)

A review of the MNRF NHIC mapping and site investigations identified no unevaluated or unmapped wetland on or within 120 metres of the site.

4.3. Significant Woodlands

The City of Barrie Official Plan Schedule H- Natural Heritage Resources identifies part of the subject properties as a Level 1 resource as shown *on Figure 4- Level 1 Resource (Woodlands)*. Based on woodland cover associated with this resource, this overlay pertains to "*Woodlands greater than 0.5 ha and less than 4 ha*".

Legend

- Subject Properties
- ELC Units

N

12.5 6.25 0 12.5 25 37.5 50 Meters

SCOPED ENVIRONMENTAL IMPACT STUDY

Figure 3
Existing Conditions

John & Pat Hargreaves
19 Dundonald Street
City of Barrie

ROOTS ENVIRONMENTAL

Table 1: Site Photos

	
Existing residence looking east.	Residence and pool in north end of property.
	
Edge of woodlot looking south to Dundonald Street.	Edge of Dundonald Street and woodlot.
	
Woodlot interior looking southeast.	Woodlot interior looking south.

Legend

- Subject Properties
- Parcels
- Level 1
- Level 1 with Existing Development Designation Subject to 3.5.2.4 d
- Level 2
- Level 3
- Natural Heritage System Salem and Hewitt's Secondary Plan Areas

N

12.5 6.25 0 12.5 25 37.5 50 Meters

SCOPED ENVIRONMENTAL IMPACT STUDY

Figure 4
Level 1 Resource (Woodlands)

John & Pat Hargreaves
19 Dundonald Street
City of Barrie

ROOTS ENVIRONMENTAL

While not specifically referenced as Significant, based on the designation of this woodland as a Level 3 resource and policies in the Official Plan, an impact assessment is provided in Section 5.

4.4. Significant Valleylands

No significant valley land features were identified during the desktop review or found during field surveys on the site.

4.5. Significant Wildlife Habitat

An assessment of candidate Significant Wildlife Habitat has been completed using the "Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E" (MNRF 2015) based on the results of the desktop review, site investigations and analysis. This assessment is attached.

No Significant Wildlife Habitat was identified on the subject property or adjacent lands.

4.6. Significant Areas of Natural and Scientific Interest

A desktop review of available information found no Significant (Regionally or Provincially) ANSI's in the study area.

4.7. Fish Habitat

No watercourses, waterbodies or other aquatic features were identified during the desktop review or found during field investigations within the study area.

4.8. Habitat of Endangered or Threatened Species

A Species at Risk Assessment was completed and is attached. This Assessment was completed based on habitats presence, requirements for listed species and site investigations. Potential for two endangered species, the Little Brown Myotis (*Myotis lucifugus*) and Nothern Myotis (*Myotis septentrionalis*) was identified.

Site investigations have identified the potential for the habitat of an endangered species, the Little Brown Myotis and Northern Myotis within suitable cavity/snag trees along woodland slope. Based on the presence of this habitat, an impact assessment is provided in Section 5.

5. Impact Assessment and Mitigation

Two (2) natural heritage features were identified within the site and adjacent lands: Significant Woodlands/Level 3 resource and Habitat of Endangered or Threatened Species.

This section will assess potential impacts to these features and ecological functions because of the proposed development and provides mitigation measures to ensure no negative impacts. This report utilizes the definition of a "negative impact" in the PPS (Page 47) "*in regard to other natural heritage features and areas, degradation that threatens the health and integrity of the*

natural features or ecological functions for which an area is identified due to single, multiple or successive development or site alteration activities."

5.1. Significant Woodlands

The proposed development will remove approximately 0.24ha of woodland cover from the subject property. Removal of part of this area was previously approved for development in 2014.

This will result in a 4.9% reduction in size of the larger woodland feature (and Level 3 Natural Heritage Resource), which extends to the north, east and west of the subject property as shown on *Figure 4: Woodland Removal*. Approximately 4.66 ha of woodland cover associated with this feature will retained in the landscape, which will continue to meet criteria for size (>0.5 –

4ha) and significance under the City of Barrie Official Plan. Connectivity will be maintained in an east-west direction within woodlands north of the subject property, which contains similar structure (mature deciduous forest) to that on the subject property.

In discussions with the owners of the property and project team, it is the intent to retain as many trees as possible subject to site design. We recommend that native tree species, to include hard maple and red oaks, be planted in landscaping areas and along the edges of the property to assist in compensation for loss of trees on site.

A Tree Inventory/Assessment and Preservation Plan/Removal Plan (Riverstone Environmental Solutions Inc. 2021) was completed for the subject property and abutting properties. This report outlines requirements for protection and or removal of boundary trees. Only 3 boundary trees will be removed for development. Protection measures are provided in the Plan for to ensure no impacts to remaining trees on adjacent lands, including a landscaped buffer around the boundary of the subject lands.

As development of the subject properties will retain sufficient woodland area on adjacent lands to continue to meet size requirements for significance as a Level 1 resource in the City of Barrie Official Plan, tree protection measures will occur per the Tree Inventory/Assessment and Preservation Plan/Removal Plan, and additional plantings will be completed on site, no negative impacts are anticipated.

5.2. Habitat of Endangered or Threatened Species

Four (4) potential roost trees for species at risk bat were identified within woodland cover to be removed as a result of the proposed development. Species and their habitat listed as threatened or endangered are protected under the Ontario *Endangered Species Act* (ESA). The document "Categorizing and Protecting Habitat under the *Endangered Species Act*" (Ontario Government February 2012) states in Section 3.1.2 "Destroying of Habitat" that:

> "*An activity that destroys the habitat of a species is one that alters the habitat in ways that eliminate the function (usefulness) of the habitat for supporting one or more of the species' life processes."*
>
> *"In some cases, the anticipated alteration that a proposed activity will have on habitat may be so minor that the function of the habitat for supporting the species' life processes will not become impaired or eliminated. In such cases the activity would not contravene subsection 10(1) of the ESA and would not require authorization under the Act with respect to this provision*."

The anticipated removal will be extremely minor in relation to available habitat of approximately 4.66 ha contiguous to the north, west and east of the subject property. The removal of these four trees will not eliminate the function of the habitat in the area.

To compensate for the loss of potential roosting trees, it is recommended that two bat boxes (ex. http://canadianbathouses.com/our - products/the - nursery/) be installed along the edges of the property abutting the remaining treeline. As noted above, it has been recommended that native maple and oak be planted along the edges of the property post-development. These species are favored by bat species for roosting and may eventually replace those removed.

To avoid any direct harm to bats potentially using these roosting trees, it is recommended that there be no removal of trees during the active season of April 1 – October 31st.

Based on limited amount of habitat present and mitigation measures recommended above, we anticipate no contravention of the ESA and no negative impacts to this feature as a result of the proposed development.

5.3. Additional Recommendations

5.3.1. Migratory Bird Convention Act

To avoid potential direct impacts to bird species (i.e. destruction of nests) protected under the *Migratory Birds Convention Act*, it is recommended that no clearing of vegetation occur between April 5 – August 27th per Environment Canada's general nesting periods of migratory birds (https://www.canada.ca/en/environment-climate-change/services/avoiding-harm-migratory-birds/general-nesting-periods/nesting-periods.html#_zoneC_calendar).

5.3.2. LSRCA Ecological Offsetting Policy

The Ecological Offsetting Policy (revised May 2019) was implemented by the LSRCA to support goals for the natural heritage protection, enhancement and restoration, and the "no net loss" of natural features in the watershed. Development proposals subject to Planning Act approvals that will result in the removal of woodland will be required to compensate for the loss of this

features. The replacement ratio for the extent of the feature will be 2:1 per requirements of the Offsetting Policy in addition to a 10-metre minimum vegetation protection zone.

As indicated in LSRCA correspondence and the Terms of Reference for this SEIS, a staking of this feature will be completed with LSRCA to confirm the size of the woodland and offsetting costs for the development. Staking of the woodlands will be completed through the Zoning By-law Amendment review process and will occur in the spring of 2022.

6. Conclusions

Roots Environmental has been retained by John & Pat Hargreaves to prepare this Scoped Environmental Impact Study relative to a new rezoning and development application for the subject property.

Two natural heritage features were confirmed within the subject property, identified as a Level 3 Natural Heritage Resource in the City of Barrie Official Plan and potential Habitat of an Endangered and Threatened Species.

Provided that development occurs in accordance with the proposed Concept Plan and recommendations provided in this update, we anticipate no negative impacts to the Natural Heritage Resource Level 3 feature (Significant Woodlands) or habitat for an endangered species.

If you have any questions, please contact me.

Sincerely,

Kyle Fleming, BSc. (Wildlife)
Senior Ecologist/Owner

Cc: James Hunter – Innovative Planning Solutions Inc.

Attach.

1. General Information:

Date: March 11, 2022

Address: 19 Dundonald Street, Barrie

Name of consulting firm: Roots Environmental

Contact information: Kyle Fleming, kyle@rootsenvironmental.ca, 705-718-6153

2. Identify all <u>potential</u> natural heritage and hydrologic features in the study area (check all that apply):

**The LSRCA recognizes that this is a preliminary assessment to determine what studies may be suitable for the property. A site visit may be required to verify the presence/absence of features.*

- ☐ Wetland
- ☒ Woodland
- ☐ Valleyland
- ☐ Grassland or meadow
- ☐ Wildlife habitat
- ☐ Area of natural and scientific interest (ANSI)
- ☐ Sand barren, savannah or tallgrass prairie
- ☐ Alvar
- ☐ Drainage feature/watercourse
- ☐ Kettle lake
- ☐ Seepage area or spring
- ☐ Lake or pond (and their littoral zone)
- ☐ Lake Simcoe shoreline
- ☐ Natural areas abutting Lake Simcoe
- ☒ Habitat of endangered and threatened species
- ☐ Fish habitat

3. Activities to be undertaken and studies required for a complete NHE/EIS submission:**

*** Some activities/studies are pre-selected (☒) as they are a minimum requirement for NHE/EIS submissions.*

☒ Consult with the appropriate Municipal and Conservation Authority staff, as required, to establish the required scope of study.

☒ Identify an appropriate study area - generally the area of anticipated disturbance plus 120 m.

☒ Collect and include applicable background information and current environmental mapping for natural heritage and hydrologic features, and the natural heritage system within and surrounding the study area.

☒ Identify and provide detailed descriptions of natural heritage and hydrologic features in the study area, their function, and the broader natural heritage system that they are within. Determine the significance of these natural heritage and hydrologic features under applicable policy.

☒ Evaluate existing vegetation communities using Ecological Land Classification (ELC) for Southern Ontario (Lee et al. 1998. Ecological Land Classification for Southern Ontario: first approximation and its applications. SCSS Field Guide FG-02). Provide a description of ELC communities in the study area and include completed ELC field sheets as an appendix.

☒ Conduct a one -season vegetation inventory in the late spring/summer/fall. Include the inventory categorized by ELC community as an appendix and denote any Species at Risk and/or provincially/locally rare species.

☐ Conduct three (3) breeding amphibian surveys as per the Marsh Monitoring Program protocol (Bird Studies Canada). Observational salamander surveys may be required if potential habitat exists in the study area. Include completed field sheets as an appendix.

☐ Conduct two (2) dawn breeding bird surveys between May 24 and July 15, under appropriate conditions, with a minimum of 10 days between surveys, and record all occurrences and breeding behaviors. Point counts, wandering transects or a combination of the two must be used according to features present and site conditions. Include completed field sheets as an appendix. A third survey will be required if suitable grassland bird habitat is present.

☒ Record observations of all wildlife occurrences and behaviours and assess wildlife habitat function.

☒ Screen for Species at Risk (SAR), listed under the *Endangered Species Act, 2007,* based on existing or potential habitat. Additional species-specific surveys may be required if SAR habitat is present (e.g. butternut health assessments, snag surveys, bat acoustic monitoring surveys, evening whip-poor-will surveys, etc.), please contact the Ministry of Environment, Conservation and Parks (MECP) for further direction. Include any relevant correspondence with the MECP as an appendix

☒ Assess for Significant Wildlife Habitat (e.g. turtle nesting or wintering area, reptile hibernaculum, woodland raptor nesting habitat, seeps, springs, etc.) as per the Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E (MNRF, January 2015).

☒ Identify any ecological linkages or movement corridors within the study area. Demonstrate how connectivity within and between natural heritage and hydrologic features will be maintained and, where possible, improved or restored to allow for the effective dispersal and movement of plants and animals.

☒ Provide a general description of the methodology, dates, timing, and locations of completed field surveys.

▣ Confirm the boundaries of any wetland and/or woodland features on the property through a staking exercise with the LSRCA. Boundary points must be surveyed with a high-accuracy GPS device (accurate to within 10 cm). A professional Ontario Land Surveyor (OLS) may be required to attend. Wetland staking exercises must be completed between June 15 and September 30 (exceptions may apply). Note that a site visit fee may apply.

☐ Complete an aquatic habitat assessment for all drainage features/watercourses in the study area, including characterization of hydrologic features (i.e. permanent, intermittent, ephemeral, headwater drainage feature) and suitability as fish habitat. Include a description of instream and riparian cover, bank stability, substrate composition, stream morphology, dimensions and gradient, thermal regime indicators, potential barriers, woody debris distribution, aquatic vegetation, groundwater seepage areas, etc.

☐ Complete a catchment-based water balance for the study area to assess how existing drainage conditions and moisture regimes that support sensitive hydrologic features (e.g. wetland, woodlands, watercourse) may be impacted by the proposed development. Demonstrate how current hydrologic inputs will be maintained post-development. Please note, the water balance assessment may also be a requirement under other provincial policies, therefore the NHE/EIS should coordinate with/summarize the water balance work undertaken by others.

▣ Recommend the dimensions of an appropriate vegetation protection zone (VPZ)/buffer to natural heritage and hydrologic features required to mitigate impacts from the proposed development. Recommendations for restoration/plantings should be provided for all buffers.

☒ Provide a detailed description of the proposed development.

☒ Map the following information separately on current high quality ortho-air photos:

1) ELC vegetation communities, natural heritage and hydrologic features and their associated VPZs, and the proposed development and anticipated limit of disturbance (e.g. grading limits); and,
2) ELC vegetation communities, survey locations, other environmental features (e.g. linkages, wildlife corridors, seeps, springs, stick nests, wildlife habitat, rare species, invasive species, etc.), and existing structures and/or trails.

☒ Assess the potential direct, indirect, and cumulative impacts of the proposed development on natural heritage and hydrologic features, the natural heritage system, and related ecological and hydrologic functions.

☒ Develop and provide an appropriate avoidance/mitigation/restoration strategy to address the potential impacts of the proposed development.

☒ Demonstrate how the proposed development is in conformity with all federal, provincial, regional, and municipal natural heritage policies applicable in the Lake Simcoe watershed.

☒ Complete one final report for circulation and approval, prepared by qualified professionals, in an electronic format as well as one (1) hard copy.

4. Additional studies or plans that may be required include:

☐ Landscape/Restoration/Planting Plan
☐ Edge Management Plan
▣ Tree Inventory/Arborist Report/Tree Preservation Plan
☐ Trails Impact Study
▣ Ecological Offsetting Strategy (please refer to LSRCA's Ecological Offsetting Policy)
☐ Environmental Monitoring Plan/Report
☐ Fluvial Geomorphological Assessment
☐ Natural Channel Design

5. Additional notes and/or requirements:

Field surveys were completed on July 8 and November 11, 2019 to inspect the subject property.

A subsequent inspection of treed communities was completed on September 3, 2020 with Riverstone Environmental Solutions (Arborist).

Field investigations on the property were scoped as the amount of natural woodland habitat to be removed is very small (0.24 ha), bordered on three sides by development and contained limited potential for significant habitats.

Please note that changes to the study area, the proposed development, and/or policy changes may require additional information/studies.

Please provide current field survey data in the NHE/EIS submission. Field survey data will be considered valid for five (5) years from the date the survey was conducted, except for Species at Risk screenings, which are valid for one (1) year. If outdated field data is provided, additional surveys may be required.

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
1008290	SPECIES	Yellow-banded Bumble Bee	Bombus terricola		SC	SC	17PK0516	
1008290	SPECIES	Chimney Swift	Chaetura pelagica		THR	THR	17PK0516	
1008290	SPECIES	Eastern Meadowlark	Sturnella magna		THR	THR	17PK0516	

Species list in taxonomic order for square 17PK01

All species

Number of rows of data displayed below: 23.

Species #	Common Name	# of Records	Earliest Yr	Latest Yr
1	Blanding's Turtle	4	2016	2018
3	Midland Painted Turtle	23	1925	2019
4	Northern Map Turtle	1	2016	2016
5	Red-eared Slider	5	1992	2013
6	Snapping Turtle	23	1965	2019
12	Eastern Gartersnake	9	1926	2018
18	Milksnake	3	2009	2010
19	Northern Watersnake	1	2016	2016
21	Red-bellied Snake	4	1988	2018
23	Northern Ring-necked Snake	1	2017	2017
25	American Bullfrog	3	1979	2017
27	Gray Treefrog	19	1989	2018
28	Green Frog	25	1989	2018
29	Mink Frog	1	2016	2016
30	Northern Leopard Frog	9	1979	2016
31	Pickerel Frog	1	1929	1929
32	Spring Peeper	30	1990	2019
33	Western Chorus Frog	2	2007	2012
34	Wood Frog	5	2010	2018
35	American Toad	25	1969	2018
41	Eastern Red-backed Salamander	3	1929	2018
48	Spotted Salamander	1	1926	1926
49	Five-lined Skink	2	2016	2016

TEA home page | Main atlas page

Species list for square 17PK01 (number of entries returned: 110)

Region	Square	Species	Breeding Evidence			Atlasser Name	Point Counts			
			Max BE	Categ	#Sq		#PC	%PC	Abun	#Sq
13	17PK01	Canada Goose	NY	CONF	1	Jeff'survey Howard				
13	17PK01	Wood Duck	FY	CONF	1	Dave Fewster				
13	17PK01	American Black Duck	FY	CONF	1					
13	17PK01	Mallard	NY	CONF	1	Jeff'survey Howard	2	9.09	0.4091	1
13	17PK01	Blue-winged Teal	H	POSS	1	Dave Fewster				
13	17PK01	Common Merganser	P	PROB	1					
13	17PK01	Ruffed Grouse	H	POSS	1	Dave Fewster				
13	17PK01	Wild Turkey	FY	CONF	1	Dave Fewster				
13	17PK01	American Bittern	H	POSS	1	Dave Fewster				
13	17PK01	Great Blue Heron	NY	CONF	1	Liz M. MacDonald	1	4.55	0.0455	1
13	17PK01	Green Heron	FY	CONF	1		1	4.55	0.0909	1
13	17PK01	Turkey Vulture	P	PROB	1	Christopher Mr. Christopher G. Harris Harris				
13	17PK01	Osprey	FY	CONF	1	Liz M. MacDonald				
13	17PK01	Cooper's Hawk	NY	CONF	1	Jeff'survey Howard				
13	17PK01	Broad-winged Hawk	H	POSS	1					
13	17PK01	Red-tailed Hawk	H	POSS	1					
13	17PK01	Merlin	T	PROB	1					
13	17PK01	Peregrine Falcon	T	PROB	1	Ted Armstrong				
13	17PK01	Virginia Rail	A	PROB	1	Dave Fewster				
13	17PK01	Sora	T	PROB	1					
13	17PK01	Killdeer	D	PROB	1	Kenneth F Abraham	2	9.09	0.1818	1
13	17PK01	Rock Pigeon	AE	CONF	1		2	9.09	0.4091	1
13	17PK01	Spotted Sandpiper	FY	CONF	1					
13	17PK01	Common Snipe	D	PROB	1					
13	17PK01	American Woodcock	S	POSS	1					
13	17PK01	Ring-billed Gull	H	POSS	1	Christopher Mr. Christopher G. Harris Harris	9	40.91	2.5909	1
13	17PK01	Mourning Dove	NY	CONF	1		4	18.18	0.3182	1
13	17PK01	Black-billed Cuckoo	H	POSS	1					
13	17PK01	Eastern Screech-Owl	FY	CONF	1					
13	17PK01	Great Horned Owl	S	POSS	1					
13	17PK01	Barred Owl	H	POSS	1					
13	17PK01	Common Nighthawk	T	PROB	1					
13	17PK01	Whip-poor-will	T	PROB	1					
13	17PK01	Chimney Swift	T	PROB	1	Liz M. MacDonald	2	9.09	0.1818	1
13	17PK01	Ruby-throated Hummingbird	T	PROB	1					
13	17PK01	Belted Kingfisher	AE	CONF	1	Dave Fewster				
13	17PK01	Red-headed Woodpecker	CF	CONF	1					
13	17PK01	Yellow-bellied Sapsucker	FY	CONF	1	Christopher Mr. Christopher G. Harris Harris	1	4.55	0.0455	1
13	17PK01	Downy Woodpecker	FY	CONF	1	Dave Fewster	3	13.64	0.1818	1
13	17PK01	Hairy Woodpecker	FY	CONF	1					
13	17PK01	Northern Flicker	T	PROB	1	Liz M. MacDonald	4	18.18	0.1818	1
13	17PK01	Pileated Woodpecker	S	POSS	1					
13	17PK01	Eastern Wood-Pewee	T	PROB	1	Dave Fewster	3	13.64	0.1818	1
13	17PK01	Alder Flycatcher	T	PROB	1	Dave Fewster				
13	17PK01	Willow Flycatcher	T	PROB	1					
13	17PK01	Least Flycatcher	T	PROB	1					
13	17PK01	Eastern Phoebe	NY	CONF	1					
13	17PK01	Great Crested Flycatcher	T	PROB	1	Dave Fewster	2	9.09	0.1818	1
13	17PK01	Eastern Kingbird	NY	CONF	1		2	9.09	0.0909	1
13	17PK01	Blue-headed Vireo	S	POSS	1					
13	17PK01	Warbling Vireo	CF	CONF	1		3	13.64	0.1364	1
13	17PK01	Red-eyed Vireo	AE	CONF	1		9	40.91	1.0	1
13	17PK01	Blue Jay	CF	CONF	1		2	9.09	0.0909	1
13	17PK01	American Crow	CF	CONF	1		11	50.0	0.8182	1
13	17PK01	Common Raven	P	PROB	1					
13	17PK01	Horned Lark	D	PROB	1		1	4.55	0.0455	1
13	17PK01	Purple Martin	H	POSS	1					
13	17PK01	Tree Swallow	AE	CONF	1		1	4.55	0.0909	1
13	17PK01	Northern Rough-winged Swallow	H	POSS	1	Liz M. MacDonald				
13	17PK01	Bank Swallow	AE	CONF	1					
13	17PK01	Cliff Swallow	P	PROB	1	Liz M. MacDonald				
13	17PK01	Barn Swallow	FY	CONF	1	2 atlassers	3	13.64	0.3636	1
13	17PK01	Black-capped Chickadee	NY	CONF	1	Jeff'survey Howard	12	54.55	1.0	1
13	17PK01	Red-breasted Nuthatch	P	PROB	1	Dave Fewster	1	4.55	0.0455	1
13	17PK01	White-breasted Nuthatch	NE	CONF	1		5	22.73	0.3182	1
13	17PK01	Brown Creeper	P	PROB	1		1	4.55	0.0455	1
13	17PK01	House Wren	CF	CONF	1	Christopher Mr. Christopher G. Harris Harris	3	13.64	0.1818	1
13	17PK01	Winter Wren	T	PROB	1					
13	17PK01	Veery	T	PROB	1	Dave Fewster	1	4.55	0.0455	1
13	17PK01	Wood Thrush	T	PROB	1					
13	17PK01	American Robin	CF	CONF	1	Dave Fewster	4	18.18	0.3636	1
13	17PK01	Gray Catbird	NY	CONF	1		2	9.09	0.0909	1
13	17PK01	Brown Thrasher	P	PROB	1					
13	17PK01	European Starling	NY	CONF	1		7	31.82	1.4545	1
13	17PK01	Cedar Waxwing	AE	CONF	1		4	18.18	0.3636	1
13	17PK01	Northern Parula	T	PROB	1	Dave Fewster				
13	17PK01	Yellow Warbler	CF	CONF	1		1	4.55	0.0455	1
13	17PK01	Chestnut-sided Warbler	T	PROB	1		1	4.55	0.0455	1
13	17PK01	Yellow-rumped Warbler	T	PROB	1	Dave Fewster				
13	17PK01	Black-throated Green Warbler	S	POSS	1					
13	17PK01	Blackburnian Warbler	S	POSS	1					
13	17PK01	Pine Warbler	NY	CONF	1	Jeff'survey Howard	2	9.09	0.0909	1
13	17PK01	Black-and-white Warbler	T	PROB	1					
13	17PK01	American Redstart	AE	CONF	1	Liz M. MacDonald				
13	17PK01	Ovenbird	DD	CONF	1		2	9.09	0.0909	1
13	17PK01	Northern Waterthrush	T	PROB	1					
13	17PK01	Mourning Warbler	A	PROB	1					
13	17PK01	Common Yellowthroat	DD	CONF	1					
13	17PK01	Eastern Towhee	S	POSS	1					
13	17PK01	Chipping Sparrow	CF	CONF	1	Christopher Mr. Christopher G. Harris Harris	6	27.27	0.4091	1
13	17PK01	Field Sparrow	T	PROB	1					
13	17PK01	Vesper Sparrow	T	PROB	1	Dave Fewster	2	9.09	0.0909	1
13	17PK01	Savannah Sparrow	CF	CONF	1					
13	17PK01	Song Sparrow	CF	CONF	1	Dave Fewster	14	63.64	0.9545	1
13	17PK01	Swamp Sparrow	CF	CONF	1	Dave Fewster	1	4.55	0.1818	1
13	17PK01	White-throated Sparrow	FY	CONF	1					
13	17PK01	Scarlet Tanager	T	PROB	1					
13	17PK01	Northern Cardinal	NY	CONF	1	Jeff'survey Howard	3	13.64	0.1818	1
13	17PK01	Rose-breasted Grosbeak	T	PROB	1		1	4.55	0.0455	1

13	17PK01	Indigo Bunting	A	PROB	1	Christopher Mr. Christopher G. Harris Harris	4	18.18	0.1818	1
13	17PK01	Bobolink	T	PROB	1					
13	17PK01	Red-winged Blackbird	CF	CONF	1	Dave Fewster	8	36.36	1.0455	1
13	17PK01	Eastern Meadowlark	T	PROB	1					
13	17PK01	Common Grackle	CF	CONF	1		6	27.27	0.5909	1
13	17PK01	Brown-headed Cowbird	NE	CONF	1		2	9.09	0.0909	1
13	17PK01	Baltimore Oriole	NY	CONF	1		2	9.09	0.1364	1
13	17PK01	Purple Finch	S	POSS	1	Christopher Mr. Christopher G. Harris Harris	1	4.55	0.0455	1
13	17PK01	House Finch	AE	CONF	1		2	9.09	0.0909	1
13	17PK01	American Goldfinch	NY	CONF	1	2 atlassers	14	63.64	1.3182	1
13	17PK01	House Sparrow	FY	CONF	1	Liz M. MacDonald	6	27.27	0.7273	1

New data summary Download results

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
19 Dundonald Street, Barrie

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Waterfowl Stopover and Staging Areas (Terrestrial) **Rationale:** Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus, evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). • Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. • Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. Information Sources • Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. • Reports and other information available from Conservation Authorities • Sites documented through waterfowl planning processes (*e.g.* EHJV implementation plan) • Field Naturalist Clubs • Ducks Unlimited Canada • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" • Any mixed species aggregations of 100 or more individuals required. • The flooded field ecosite habitat plus a 100-300m radius area, dependent on local site conditions and adjacent land use is the significant wildlife habitat. • Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). • SWHMiST Index #7 provides development effects and mitigation measures.	No suitable habitat present
Waterfowl Stopover and Staging Areas (Aquatic) **Rationale:** Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	• Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. • These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). Information Sources • Environment Canada • Naturalist clubs often are aware of staging/stopover areas • OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. • Sites documented through waterfowl planning processes (*e.g.* EHJV implementation plan) • Ducks Unlimited projects • Element occurrence specification by Nature Serve: http://www.natureserve.org • Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas	Studies carried out and verified presence of: • Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. • Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. • The combined area of the ELC ecosites and a 100m radius area is the SWH. • Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). • SWHMiST Index #7 provides development effects and mitigation measures.	No suitable habitat present

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
19 Dundonald Street, Barrie

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Shorebird Migratory Stopover Area **Rationale:** High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. • Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. • Sewage treatment ponds and storm water ponds do not qualify as a SWH. Information Sources • Western hemisphere shorebird reserve network • Canadian Wildlife Service (CWS) Ontario Shorebird Survey • Bird Studies Canada • Ontario Nature • Local birders and naturalist clubs • Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area	Studies confirming: • Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) • Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. • The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #8 provides development effects and mitigation measures.	No suitable habitat present
Raptor Wintering Area **Rationale:** Sites used by multiple species of individuals and used annually are most significant	Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Hawks/Owls: Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	• The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. • Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. • Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. • Field area of the habitat is to be windswept with limited snow depth or accumulation. • Eagle sites have open water, large trees and snags available for roosting. Information Sources: • OMNRF Ecologist or Biologist Field Naturalist Clubs • Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area • Data from Bird Studies Canada • Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.	Studies confirm the use of these habitats by: • One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. • To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. • The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #10 and #11 provides development effects and mitigation measures.	No suitable habitat present

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
19 Dundonald Street, Barrie

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Bat Hibernacula Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	• Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. • Active mine sites should not be considered as SWH • The locations of bat hibernacula are relatively poorly known. Information Sources • OMNRF for possible locations and contact for local experts • Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern • Development and Mines for location of mine shafts. • Clubs that explore caves (*e.g.* Sierra Club) • University Biology Departments with bat experts.	• All sites with confirmed hibernating bats are SWH. • The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms • Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects. • SWHMiST Index #1 provides development effects and mitigation measures.	No suitable habitat present.
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	• Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). • Maternity roosts are not found in caves and mines in Ontario. • Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. • Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. • Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. Information Sources • OMNRF for possible locations and contact for local experts • University Biology Departments with bat experts.	• Maternity Colonies with confirmed use by; ○ >10 Big Brown Bats ○ >5 Adult Female Silver-haired Bats • The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. • Evaluation methods for maternity colonies should be conducted following methods outlined in the "Bats and Bat Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #12 provides development effects and mitigation measures.	Potential snag/cavity trees were found (4) on site, however, woodlands in the area do not meet size requirement of >10 ha in size to be identified as significant.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
19 Dundonald Street, Barrie

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Turtle Wintering Areas **Rationale:** Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle **Special Concern:** Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	• For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. • Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. • Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. Information Sources • EIS studies carried out by Conservation Authorities. • Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. • OMNRF Ecologist or Biologist • Field Naturalist clubs • Natural Heritage Information Center (NHIC)	• Presence of 5 over-wintering Midland Painted Turtles is significant. • One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. • The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. • Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) • Congregation of turtles is more common where wintering areas are limited and therefore significant • SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat.	No suitable habitat is present in the Study Area.
Reptile Hibernaculum **Rationale:** Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	**Snakes:** Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake **Special Concern:** Milksnake Eastern Ribbonsnake **Lizard:** **Special Concern** (Southern Shield population)**:** Five-lined Skink	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	• For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. • Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. • Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. • Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures. Information Sources • In spring, local residents or landowners may have observed the emergence of snakes on their property (*e.g.* old dug wells). • Reports and other information available from Conservation Authorities. • Field Naturalists clubs • University herpetologists • Natural Heritage Information Center (NHIC) • OMNRF ecologist or biologist may be aware of locations of wintering skinks	Studies confirming: • Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. • Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (*e.g.* foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) • Note: If there are Special Concern Species present, then site is SWH • Note: Sites for hibernation possess specific habitat parameters (*e.g.* temperature, humidity, *etc.*) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (*e.g.* mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH. • SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula. • Presence of any active hibernaculum for skink is significant. • SWHMiST Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.	No old stone fences, foundations or rock crevices found that would provide hibernacula habitat.

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SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Colonially -Nesting Bird Breeding Habitat (Bank and Cliff) **Rationale:** Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	• Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. • Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. • Does not include a licensed/permitted Mineral Aggregate Operation. Information Sources • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas • Bird Studies Canada; *NatureCounts* http://www.birdscanada.org/birdmon/ • Field Naturalist Clubs.	Studies confirming: • Presence of 1 or more nesting sites with 8or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. • A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. • Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #4 provides development effects and mitigation measures.	No suitable habitat present
Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs) **Rationale:** Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	• Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. • Most nests in trees are 11 to 15 m from ground, near the top of the tree. Information Sources • Ontario Breeding Bird Atlas, colonial nest records. • Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). • Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony • Aerial photographs can help identify large heronries. • Reports and other information available from CAs. • MNRF District Offices • Local naturalist clubs	Studies confirming: • Presence of 5 or more active nests of Great Blue Heron or other listed species. • The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. • Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells. • SWHMiST Index #5 provides development effects and mitigation measures.	No suitable habitat present

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SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Colonially -Nesting Bird Breeding Habitat (Ground) **Rationale:** Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT CUS	• Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. • Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. Information Sources • Ontario Breeding Bird Atlas, rare/colonial species records. • Canadian Wildlife Service • Reports and other information available from CAs. • Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area • MNRF District Offices • Field Naturalist clubs	Studies confirming: • Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. • Presence of 5 or more pairs for Brewer's Blackbird. • Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. • The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. • Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #6 provides development effects and mitigation measures.	No suitable habitat present
Migratory Butterfly Stopover Areas **Rationale:** Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one Community Series from each land class: Field: CUM CUT CUS Forest: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario. • The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. • The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. • Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. Information Sources • OMNRF (NHIC) • Agriculture Canada in Ottawa may have list of butterfly experts. • Field Naturalist Clubs • Toronto Entomologists Association • Conservation Authorities	Studies confirm: • The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. • Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. • MUD of >5000 **or** >3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant. • SWHMiST Index #16 provides development effects and mitigation measures.	No suitable habitat present

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Landbird Migratory Stopover Areas **Rationale:** Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website. All migratory songbirds. Canadian Wildlife Service Ontario website:	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant. • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH. Information Sources • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program	Studies confirm: • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #9 provides development effects.	No suitable habitat present
Deer Yarding Areas **Rationale:** Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in "yards" to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.	White-tailed Deer	Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	• Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNRF determines deer yards following methods outlined in "Selected Wildlife and Habitat Features: Inventory Manual". • Woodlots with high densities of deer due to artificial feeding are not significant.	No Studies Required: • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	Deer wintering area have not been identified within the development area or adjacent lands.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
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SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Deer Winter Congregation Areas **Rationale:** Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	• Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. • Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. • If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. • Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. • Woodlots with high densities of deer due to artificial feeding are not significant. Information Sources • MNRF District Offices • LIO/NRVIS	Studies confirm: • Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. • Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. • Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures.	No suitable habitat present. See above.

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Cliffs and Talus Slopes **Rationale:** Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO TAS TAT CLO CLS CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.	Most cliff and talus slopes occur along the Niagara Escarpment. Information Sources • The Niagara Escarpment Commission has detailed information on location of these habitats. • OMNRF District • Natural Heritage Information Center (NHIC) has location information available on their website • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Cliffs or Talus Slopes • SWHMiST Index #21 provides development effects and mitigation measures.	ELC ecosites not present in the study area.
Sand Barren **Rationale:** Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size. Information Sources • MNRF Districts • Natural Heritage Information Center (NHIC) has location information available on their website. • Field Naturalist clubs • Conservation Authorities	• Confirm any ELC Vegetation Type for Sand Barrens • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) • SWHMiST Index #20 provides development effects and mitigation measures.	ELC ecosites not present in the study area.
Alvar **Rationale:** Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 **Five Alvar Species:** 1) *Carex crawei* 2) *Panicum philadelphicum* 3) *Eleocharis compressa* 4) *Scutellaria parvula* 5) *Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E.	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	An Alvar site > 0.5 ha in size. Information Sources • Alvars of Ontario (2000), Federation of Ontario Naturalists. • Ontario Nature – Conserving Great Lakes Alvars. • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	• Field studies that identify four of the five **Alvar Indicator Species** at a Candidate Alvar site is Significant. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. • SWHMiST Index #17 provides development effects and mitigation measures.	ELC ecosites not present in the study area.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
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RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Old Growth Forest **Rationale:** Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. Information Sources • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments	Field Studies will determine: • If dominant trees species are >140 years old, then the area containing these trees is Significant Wildlife Habitat. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics. • SWHMiST Index #23 provides development effects and mitigation measures.	Trees found on site are not old growth.
Savannah **Rationale:** Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures.	ELC ecosites are not present in the study area.
Tallgrass Prairie **Rationale:** Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #19 provides development effects and mitigation measures.	ELC ecosites are not present in the study area.

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RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Other Rare Vegetation Communities **Rationale:** Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. Information Sources • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. • Area of the ELC Vegetation Type polygon is the SWH. • SWHMiST Index #37 provides development effects and mitigation measures.	Communities present are not rare (S1-S3)

SPECIALIZED HABITAT FOR WILDLIFE					
Wildlife Habitat	**Wildlife Species**	**Candidate SWH**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Waterfowl Nesting Area **Rationale:** Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to PSW	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. • Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. • Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. Information Sources • Ducks Unlimited staff may know the locations of particularly productive nesting sites. • OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. • Reports and other information available from Conservation Authorities.	Studies confirmed: • Presence of 3 or more nesting pairs for listed species excluding Mallards, or; • Presence of 10 or more nesting pairs for listed species including Mallards. • Any active nesting site of an American Black Duck is considered significant. • Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. • SWHMiST Index #25 provides development effects and mitigation measures.	No suitable habitat present.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
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RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat **<u>Rationale:</u>** Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.	Osprey Special Concern Bald Eagle	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water. • Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. • Nests located on man-made objects are not to be included as SWH (*e.g.* telephone poles and constructed nesting platforms). <u>Information Sources</u> • Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. • MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. • Nature Counts, Ontario Nest Records Scheme data. • OMNRF Districts • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented • Reports and other information available from Conservation Authorities. • Field Naturalists clubs	Studies confirm the use of these nests by: • One or more active Osprey or Bald Eagle nests in an area. • Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. • For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. • For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat. • To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. • Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #26 provides development effects and mitigation measures.	Suitable habitat not present in the study area.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
19 Dundonald Street, Barrie

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Woodland Raptor Nesting Habitat **Rationale:** Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer • Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. • In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. Information Sources • OMNRF Districts. • Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. • Check data from Bird Studies Canada. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of 1 or more active nests from species list is considered significant. • Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest). • Barred Owl – A 200m radius around the nest is the SWH. • Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. • Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. • Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial. (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. • SWHMiST Index #27 provides development effects and mitigation measures.	No stick nests observed on or adjacent to the Site and woodland habitat not larger enough to satisfy criteria.
Turtle Nesting Areas **Rationale:** These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle Special Concern Species Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	• Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. • For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. • Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. Information Sources • Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). • Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. • Natural Heritage Information Center (NHIC) • Field Naturalist clubs	Studies confirm: • Presence of 5 or more nesting Midland Painted Turtles. • One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. • The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. • Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. • Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. • SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat.	No suitable habitat present.

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RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Seeps and Springs **Rationale:** Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. • Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. Information Sources • Topographical Map • Thermography • Hydrological surveys conducted by Conservation Authorities and MOE. • Field Naturalists clubs and landowners. • Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.	Field Studies confirm: • Presence of a site with 2 or more seeps/springs should be considered SWH. • The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. • SWHMiST Index #30 provides development effects and mitigation measures.	No seeps/springs observed.
Amphibian Breeding Habitat (Woodland). **Rationale:** These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced	• Presence of a wetland, pond or woodland pool (including vernal pools) >500m^2 (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. • Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records. • Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. • OMNRF District • OMNRF wetland evaluations • Field Naturalist clubs • Canadian Wildlife Service • Amphibian Road Call Survey • Ontario Vernal Pool Association: http://www.ontariovernalpools.org	Studies confirm; • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. • The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. • SWHMiST Index #14 provides development effects and mitigation measures.	No suitable habitat present.

Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment
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RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	**Candidate SWH**			**Confirmed SWH**	**Assessment**
	ELC Ecosite Code	**Habitat Description**	**Detailed Information and Sources**	**Defining Criteria**	
Amphibian Breeding Habitat (Wetlands) **Rationale:** Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (*e.g.* Bull Frog) may be adjacent to woodlands.	• Wetlands>500m^2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. • Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. • Bullfrogs require permanent water bodies with abundant emergent vegetation. Information Sources • Ontario Herpetofaunal Summary Atlas (or other similar atlases) • Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. • OMNRF Districts and wetland evaluations • Reports and other information available from Conservation Authorities	Studies confirm: • Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. **or;** Wetland with confirmed breeding Bullfrogs are significant. • The ELC ecosite wetland area and the shoreline are the SWH. • A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. • If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #15 provides development effects and mitigation measures.	No suitable habitat present.
Woodland Area-Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. • Interior forest habitat is at least 200 m from forest edge habitat. Information Sources • Local bird clubs. • Canadian Wildlife Service (CWS) for the location of forest bird monitoring. • Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species. • Reports and other information available from Conservation Authorities.	Studies confirm: • Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. • Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. • Conduct field investigations in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #34 provides development effects and mitigation measures.	Habitat does not meet criteria. Large woodland blocks > 30 ha with interior habitat > 200 m from an edge not present in Study Area.

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HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Marsh Breeding Bird Habitat **Rationale:** Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan **Special Concern:** Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	• Nesting occurs in wetlands. • All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. • For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. Information Sources • OMNRF District and wetland evaluations. • Field Naturalist clubs • Natural Heritage Information Center (NHIC) Records. • Reports and other information available from Conservation Authorities. • Ontario Breeding Bird Atlas	Studies confirm: • Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or **Marsh Wren** 1 pair of Sandhill Cranes; **or** breeding by any combination of 5 or more of the listed species. • Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. • Area of the ELC ecosite is the SWH. • Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #35 provides development effects and mitigation measures.	No large marsh habitats present that could support this habitat.
Open Country Bird Breeding Habitat Sources Defining Criteria **Rationale:** This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow **Special Concern** Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha. • Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). • Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. • The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs. • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 2 or more of the listed species. • A field with 1 or more breeding Short-eared Owls is to be considered SWH. • The area of SWH is the contiguous ELC ecosite field areas. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #32 provides development effects and mitigation measures.	No suitable habitat present
Shrub/Early Successional Bird Breeding Habitat **Rationale:** This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher **Special Concern:** Yellow-breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10haclxiv in size. • Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (*i.e.* no row-cropping, haying or live-stock pasturing in the last 5 years). • Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. • Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. Information Sources • Agricultural land classification maps, Ministry of Agriculture. • Local bird clubs • Ontario Breeding Bird Atlas • Reports and other information available from Conservation Authorities.	Field Studies confirm: • Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. • A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. • The area of the SWH is the contiguous ELC ecosite field/thicket area. • Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. • Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". • SWHMiST Index #33 provides development effects and mitigation measures.	No suitable habitat present

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HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite Codes	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Terrestrial Crayfish **Rationale:** Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.	Chimney or Digger Crayfish; (*Fallicambarus fodiens*) Devil Crayfish or Meadow Crayfish; (*Cambarus Diogenes*)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. • Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. • Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. Information Sources • Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998.	Studies Confirm: • Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. • Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. • Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. • SWHMiST Index #36 provides development effects and mitigation measures.	No suitable habitat present
Special Concern and Rare Wildlife Species **Rationale:** These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites Information Sources • Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. • NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca • Ontario Breeding Bird Atlas • Expert advice should be sought as many of the rare spp. have little information available about their requirements.	Studies Confirm: • Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. • The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species *e.g.* specific nesting habitat or foraging habitat. • SWHMiST Index #37 provides development effects and mitigation measures.	Previous records within a 10-km area were identified for the Eastern Wood-Pewee (SC). This species is known to avoid urban areas (COSEWIC 2012). Given the urban nature of this woodlot and small size, there is a very low potential for any use by the Pewee. No other habitat for Rare or SC species were identified.

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ANIMAL MOVEMENT CORRIDORS					
Wildlife Habitat	**Wildlife Species**	**Candidate SHW**		**Confirmed SWH**	**Assessment**
		ELC Ecosite	**Habitat Criteria and Information Sources**	**Defining Criteria**	
Amphibian Movement Corridors **Rationale:** Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. • Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	Movement corridors between breeding habitat and summer habitat. • Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (**Amphibian Breeding Habitat –Wetland)** of this Schedule. Information Sources • MNRF District Office • Natural Heritage Information Center (NHIC) • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs	• Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. • Corridors should consist of native vegetation, with several layers of vegetation. • Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. • Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. • Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. • SWHMiST Index #40 provides development effects and mitigation measures.	No suitable habitat present.
Deer Movement Corridors **Rationale:** Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when **Deer Wintering Habitat** is confirmed as SWH from Table 1.1 of this schedule. • A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. • Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). Information Sources • MNRF District Office • Natural Heritage Information Center (NHIC). • Reports and other information available from Conservation Authorities. • Field Naturalist Clubs	• Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. • Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. • Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. • Shorter corridors are more significant than longer corridors. • SWHMiST Index #39 provides development effects and mitigation measures.	No deer yarding habitat on or adjacent to the property and hence no deer movement corridor function.

EXCEPTIONS FOR ECOREGION 6E						
Eco District	**Wildlife Habitat and Species**	**Candidate**			**Confirmed SWH**	**Assessment**
		Ecosites	**Habitat Description**	**Habitat Criteria and Information**	**Defining Criteria**	
6E-14 **Rationale:** The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.	**Mast Producing Areas** Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	• Black bears require forested habitat that provides cover, winter hibernation sites, and mast-producing tree species. • Forested habitats need to be large enough to provide cover and protection for black bears.	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech). Information Sources Important forest habitat for black bears may be identified by OMNRF.	All woodlands > 30ha with a 50%composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5	Not applicable
6E- 17 **Rationale:** Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population	**Lek** Sharp-tailed Grouse	CUM CUS CUT	• The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. • Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. • Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) • Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting Information Sources • OMNRF district office • Bird watching clubs • Local landowners • Ontario Breeding Bird Atlas	Studies confirming lek habitat are to be completed from late March to June. • Any site confirmed with sharp-tailed grouse courtship activities is considered significant • The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat • SWHMiST Index #32 provides development effects and mitigation measures	Not applicable

Species at Risk Screening

19 Dundonald Street, Barrie

Common Name	Scientific Name	SARO Status	Habitat Requirements	Habitat on Property or Adjacent Lands?	Reported In Area	Detected During Field Surveys?	Confirmed or Potential
Jefferson Salamander	*Ambystoma jeffersonianum*	END	In Canada, found exclusively in southern Ontario (*e.g.* Niagara Escarpment area). Deciduous forests with vernal pools/pond within or adjacent.	No suitable habitat present	No		
Bald Eagle	*Haliaeetus leucocephalus*	SC	A variety of habitats adjacent a major lake or river.	No suitable habitat present	No		
Bank Swallow	*Riparia riparia*	THR	Riparian habitat with sand banks for nesting	No suitable habitat present	Yes (OBBA)		No.
Barn Swallow	*Hirundo rustica*	THR	Grasslands, pastures, graminoid and other open wetlands	Yes. Barn and residence.	Yes (OBBA)		No.
Black Tern	*Chlidonias niger*	SC	Large marsh wetlands	No suitable habitat present	No		
Bobolink	*Dolichonyx oryzivorus*	THR	Grasslands	No suitable habitat present	Yes (OBBA)		No
Canada Warbler	*Cardellina canadensis*	SC	Breeds in a range of deciduous and coniferous, usually wet forest types, all with a well- developed, dense shrub layer - generally associated with the southern shield/boreal shield.	No suitable habitat present	No		
Cerulean Warbler	*Dendroica cerulea*	THR	Large blocks of continuous forest/swamp cover	No suitable habitat present	No		
Chimney Swift	*Chaetura pelagica*	THR	Typically built features (chimneys, buildings), also caves, or tree cavities in old growth forests	Chimney present in residence. Capped and screened per landowner.	Yes (NHIC)		No.
Common Nighthawk	*Chordeiles minor*	SC	Open woodlands (scattered tree cover), rock barrens and similar habitats providing mix of open land and shrub/tree cover.	Rock barren habitat is too small to support this species.	Yes (OBBA)		No.
Eastern Meadowlark	*Sturnella magna*	THR	Moderately tall grasslands, such as pastures and hayfields, but are also found in alfalfa fields, weedy borders of croplands, roadsides, orchards, airports, shrubby overgrown fields, or other open areas	No suitable habitat present	Yes (OBBA/NHIC)		No.
Eastern Whip-poor-will	*Caprimulgus vociferus*	THR	Open woodlands (scattered tree cover), rock barrens and similar habitats providing mix of open land and shrub/tree cover.	No suitable habitat present	Yes (OBBA)		No.

Common Name	Scientific Name	SARO Status	Habitat Requirements	Habitat on Property or Adjacent Lands?	Reported In Area	Detected During Field Surveys?	Confirmed or Potential
Eastern Wood-pewee	*Contopus virens*	SC	Forests, treed swamps	Decidous surrounded by urban residences and road. unsuitable for Eastern Wood-Pewee	Yes (OBBA)		No.
Golden-winged Warbler	*Vermivora chrysoptera*	SC	Shrublands/thickets, forest edges	No suitable habitat present	No		
Grasshopper Sparrow	*Ammodramus savannarum*	SC	Large grasslands	No suitable habitat present	No		
Henslow's Sparrow	*Ammodramus henslowii*	END	Large grasslands	No suitable habitat present	No		
King Rail	*Rallus elegans*	END	Large marsh wetlands	No suitable habitat present	No		
Least Bittern	*Ixobrychus exilis*	THR	Large marsh wetlands	No suitable habitat present	No		
Loggerhead Shrike	*Lanius ludovicianus*	END	Alvars, large pasturelands with shrub cover	No suitable habitat present	No		
Louisiana Waterthrush	*Seiurus motacilla*	THR	Mature forest associated with rivers	No suitable habitat present	No		
Olive-sided Flycatcher	*Contopus cooperi*	SC	Breeding occurs within coniferous or mixed forests adjacent rivers or wetlands. More often present along forest edges and clearings, including recently logged/burned areas.	No suitable habitat present	No		
Piping Plover	*Charadrius melodus*	END	Dry sandy or gravelly beaches along wetlands, rivers, or lakes	No suitable habitat present	No		
Red-headed Woodpecker	*Melanerpes erythrocephalus*	END	Open woodlands, woodland edges, parks, golf courses and cemeteries	No suitable habitat present	Yes- OBBA		No.
Short-eared Owl	*Asio flammeus*	SC	Open areas such as grasslands and marshes. Preference for prairies and savannahs.	No suitable habitat present	No		
Wood Thrush	*Hylocichla mustelina*	SC	Forests, treed swamps	Decidous surrounded by urban residences and road. Unsuitable for Wood Thrush	Yes (OBBA)		No.
Yellow Rail	*Coturnicops noveboracensis*	SC	Shallow wetlands containing reeds, sedges and marshy areas with overlying dry mats of dead vegetation.	No suitable habitat present	No		
American Eel	*Anguilla rostrata*	END	In Ontario, connecting waterbodies from the Great Lakes as far inland as Algonquin Park.	No suitable habitat present	No		
Grass Pickerel	*Esox americanus vermiculatus*	SC	Coastal wetlands in the Great Lakes and tributaries or Lake St. Clair, Lake Erie, Lake Huron, the Niagara River, Lake Ontario and the St. Lawrence River, and inland in the Severn River system.	No suitable habitat present	Yes (NHIC)		
Lake Sturgeon	*Acipenser fulvescens*	THR	Georgian Bay and connected rivers	No suitable habitat present	No		

Common Name	Scientific Name	SARO Status	Habitat Requirements	Habitat on Property or Adjacent Lands?	Reported In Area	Detected During Field Surveys?	Confirmed or Potential
Northern Brook Lamprey	*Ichthyomyzon fossor*	SC	Rivers draining into Lake Superior, Huron and Erie, and the Ottawa River.	No suitable habitat present	No		
Hine's Emerald (Dragonfly)	*Somatochlora hineana*	END	Hine's Emeralds rely on slow-moving, calcareous water with emergent vegetation for egg-laying and larval development. These conditions are associated with fens, marshes or areas where groundwater rises to the surface. Only known to occur in Minesing Wetland	No suitable habitat present	No		
Lake Huron Grasshopper	*Trimerotropis huroniana*	THR	Lives exclusively in open dune habitat along the shores of Lake Huron, Lake Michigan and Lake Superior.	No suitable habitat present	No		
Monarch	*Danaus plexippus*	SC	Caterpillars are confined to meadows and open areas containing milkweed. Adults are widespread, favouring areas with wildflowers.	No suitable habitat present	No		
West Virginia White	*Pieris virginiensis*	SC	Moist deciduous woodlots containing the plant, Toothwort.	No suitable habitat present	No		
American Badger	*Taxidea taxus*	END	Variety of habitats providing small prey (*i.e.* groundhogs, rabbits, small rodents) with a preference for tall grass prairie, sand barrens and farmland.	No suitable habitat present	No		
Eastern Small-footed Bat	*Myotis leibii*	END	Winter hibernation - caves, abandoned mines, etc. Summer maternity roost - talis slopes, rock outcrops.	No suitable habitat present	No		
Little Brown Myotis	***Myotis lucifugus***	**END**	**Winter hibernation - caves, abandoned mines, etc. Summer maternity colony - typically buildings (attics, etc.) but occasionally in tree cavities.**	**Woodland habitat did contain snag/cavity trees suitable for maternity roosting. Per communiction with the landowner, the chimney and attic are sealed providing no anthropogenic habitat for roosting bats.**	**No**		**Yes- Potential**

Common Name	Scientific Name	SARO Status	Habitat Requirements	Habitat on Property or Adjacent Lands?	Reported In Area	Detected During Field Surveys?	Confirmed or Potential
Northern Myotis	***Myotis septentrionalis***	**END**	**Winter hibernation - caves, abandoned mines, etc. Summer maternity roost - tree cavities.**	**Woodland habitat did contain snag/cavity trees suitable for maternity roosting. Per communiction with the landowner, the chimney and attic are sealed providing no anthropogenic habitat for roosting bats.**	**No**		**Yes- Potential**
Tri-colored Bat	*Perimyotis subflavus*	END	Winter hibernation - caves, abandoned mines, etc.. Summer - day roosts and maternity colonies in older forest and occasionally in barns or other structures.	Not in the range for this species.	No		
American Ginseng	*Panax quinquefolius*	END	Mature forest cover	No American Ginseng were found during the site investigation	No		
American Hart's-tongue Fern	*Asplenium scolopendrium var. americanum*	SC	Moist deciduous forests, generally associated with Niagara Escarpment.	No suitable habitat present	No		
Broad Beech Fern	*Phegopteris hexagonoptera*	SC	Prefers rich, undisturbed deciduous forest, particularly mature beech-maple forests, typically occurs in moister situations such as lower valley slopes, bottomlands and even swamps.	No suitable habitat present	No		
Butternut	*Juglans cinerea*	END	Forests, fencerows	Yes. Potential woodland habitat present.	No	No butternut found.	No.
Eastern Prairie Fringed-orchid	*Platanthera leucophaea*	END	Grasslands, wet meadows, alvars, fens	No suitable habitat present	No		
Englemann's Quillwort	*Isoëtes engelmannii*	END	Grows in shallow water in lakes and rivers (Severn River).	No suitable habitat present	No		
Forked Three-awned grass	*Aristida basiramea*	END	Grasslands, open lands, trails (localized distribution)	No suitable habitat present	No		
Hill's Thistle	*Cirsium hillii*	THR	Open areas such as prairie, sand dunes and alvar grasslands surrounded by coniferous forests.	No suitable habitat present	No		
Spotted Wintergreen	*Chimaphila maculata*	END	Dry oak-pine woodlands with sandy soils close to waterbodies	No suitable habitat present	No		
Blanding's Turtle	*Emydoidea blandingii*	THR	Wetlands with open water	No suitable habitat present	Yes (ONA)		No.

Common Name	Scientific Name	SARO Status	Habitat Requirements	Habitat on Property or Adjacent Lands?	Reported In Area	Detected During Field Surveys?	Confirmed or Potential
Eastern Foxsnake (Georgian Bay Population)	*Pantherophis gloydi*	END	Rocky habitats with trees and shrubs within, usually within 150 m of a shoreline	No suitable habitat present	No		
Eastern Hog-nosed Snake	*Heterodon platirhinos*	THR	Forests, sand barrens and wetlands providing breeding habitat for primary prey (i.e., American Toad and other amphibians)	No suitable habitat present	No		
Eastern Musk Turtle	*Sternotherus odoratus*	SC	Ponds, lakes, marshes and rivers with an abundance of emergent vegetation and muddy bottoms	No suitable habitat present	No		
Eastern Ribbonsnake	*Thamnophis sauritus*	SC	Usually found close to water, especially in marshes, where it hunts for frogs and small fish. Hibernate in aggregations in underground burrows or rock crevices	No suitable habitat present	No		
Five-lined Skink (Georgian Bay Population)	*Plestiodon fasciatus*	SC	Shorelines, rock barrens.	No suitable habitat present	Yes (ONA)		No.
Massasauga (Great Lakes-St. Lawrence Population)	*Sistrurus catenatus*	END	Wide variety of habitats: tall grass prairie, bogs, marshes, shorelines, forests and forest clearings, alvars, rock barrens, and grasslands	No suitable habitat present	No.		
Northern Map Turtle	*Graptemys geographica*	SC	Lakes	No suitable habitat present	Yes (ONA)		No.
Snapping Turtle	*Chelydra serpentina*	SC	Lakes, ponds, marshes and slow moving rivers, various wetlands with open water	No suitable habitat present	Yes (ONA)		No.
Spotted Turtle	*Clemmys guttata*	END	Wetlands with open water	No suitable habitat present	No		
Wood Turtle	*Glyptemys insculpta*	END	Clear rivers, streams or creeks with a sandy or gravelly bottom. Prefereance for wooded areas but have also been found in wet meadows, swamps and fields.	No suitable habitat present	No		

NHIC - MECP Natural Heritage Informatin Centre
BBA: Ontario Breeding Bird Atlas
ONA: Ontario Nature Atlas
(1) Based on the SARO List descriptions (https://www.ontario.ca/page/species-risk-ontario)