

Species at Risk
Assessment - 123
Robert Street East, Town
of Penetanguishene



2020-12-17

Prepared for:
InterSpec Construction 2006316 Ontario Inc.

Cambium Reference No.: 11594-001

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1.0 Introduction

Cambium Inc. (Cambium) was retained by InterSpec Construction 2006316 Ontario Inc. to conduct a Species at Risk Assessment in support of the development application for a proposed multi-unit residential development at 123 Robert Street East, in the Town of Penetanguishene, Ontario (the Site; Figure 1). In Ontario, SAR receive protection through regulations under the provincial *Endangered Species Act, 2007* (ESA). This study serves to assess the potential presence of protected species and habitats, and anticipated impacts associated with the proposed development.

Cambium discussed the proposed scope for the subject study with Town of Penetanguishene staff (Andrea Betty, Director of Planning and Community Development) on October 6, 2020. Based on this conversation, it was determined that the proposed scope was acceptable and that further consultation with Severn Sound Environmental Association (SSEA) was not required.



2.0 Applicable Natural Heritage Policy and Regulation

2.1 Endangered Species Act, 2007

Species listed as endangered or threatened on the Species at Risk in Ontario (SARO) list are protected under the provincial *Endangered Species Act, 2007* (ESA) (Government of Ontario, 2018). Section 9(1) of the ESA prohibits a person from killing, harming, harassing, capturing or taking a member of a species listed as endangered, threatened, or extirpated. Section 10(1) of the ESA prohibits the damage or destruction of habitat of species listed as endangered or threatened. Protection of special concern species is provided through designation of their habitat as significant wildlife habitat, a provincially protected natural heritage feature.



3.0 Technical Approach and Data Collection Methods

3.1 Background Information Review

Existing background information pertaining to the Site and surrounding landscape was compiled and reviewed, as part of a comprehensive desktop exercise, to better understand local biophysical conditions. In southern Ontario, readily available data includes aerial orthophotography, topographic base mapping, and geological records. Natural area records and species occurrences were obtained from digital resources and reference materials. The comprehensive desktop review for this Site included the following resources:

- Natural Heritage Areas: Make-a-map (Ministry of Natural Resources and Forestry, 2018); Accessed October 8, 2020
- Ontario Reptile and Amphibian Atlas (ORAA) (Ontario Nature, 2018); Accessed October 8, 2020
- Ontario Breeding Birds Atlas (OBBA) (2001-2005) (Bird Studies Canada, 2005); Accessed October 8, 2020
- Species Range Maps (Various Sources)

3.1.1 Ministry Consultation

In early 2019, the Government of Ontario made changes to the regulating authority on matters related to SAR in the Province. The Ministry of Environment, Conservation and Parks (MECP) is now responsible for administering the ESA and providing direction on potential compliance issues. MECP has prepared a guidance document titled ‘Client’s Guide to Preliminary Screening for Species at Risk’ to “help clients better understand their obligation to gather information and complete a preliminary screening for Species at Risk before contacting the Ministry”. This document was used to guide the SAR habitat-based screening for the subject study.

3.2 Field Investigations

Information gathered through the background information review was used to guide the development of the fieldwork program. The purpose of the field investigation was to verify information acquired through existing documentation and gather additional site-specific information. The following field-based activities were carried out on the Site and are summarized in Table 1.

Table 1 Summary of Field Investigations

Date	Time On Site	Weather Conditions	Observer	Activities
2020-10-01	1130-1230	14°C, Sun/cloud mix, Cloud Cover:50%, Wind: 2, Noise: 2	E. Silhanek	Ecological Land Classification and Vegetation Inventory Habitat-based Wildlife Survey Bat Maternity Roost Survey

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

3.2.1 Ecological Land Classification and Vegetation Inventory

The Ecological Land Classification (ELC) System for Southern Ontario (Lee, 1998) was used to classify vegetation communities on the Site. Definitions of vegetation types are derived from the ELC for Southern Ontario First Approximation Field Guide (Lee, 1998) and the revised 2008 tables. ELC units were initially identified by orthophoto interpretation during the desktop review. Field investigations served to confirm the type and extent of communities through vegetation inventory; where necessary, soil assessment is used to confirm wetland communities.

3.2.2 Habitat-Based Wildlife Surveys

Given the scale of the proposed development, a habitat-based approach was used to assess potential impacts to wildlife, consistent with standard practice. General habitat information gathered through the field investigation was used to assess the connectivity of the Site with the surrounding landscape and evaluate the ecological significance of the local area. Cambium



staff actively searched for features that may provide specialized habitat for wildlife. These searches included inspecting tree cavities, overturning logs, rocks and debris, and scanning for scat, browse, sheds, and fur. Any evidence of breeding, forage, shelter, or nesting was noted. Species and habitat observations were documented and photographed.

3.2.3 Targeted Species at Risk Surveys

3.2.3.1 Bat Maternity Roost Habitat Surveys

Several of the SAR bat species native to Ontario depend on snags or cavity trees for maternity roosting habitat. A snag or cavity tree is defined as a standing live or dead tree, ≥ 25 cm diameter at breast height (DBH), with cracks, crevices, hollows, cavities and/or loose or naturally exfoliating bark appropriate for bat roosting. High quality or significant wildlife habitat (SWH) is defined in provincial guidance documents as woodlands with greater than 10 roost trees per hectare. To determine if suitable habitat for bats existed on/or adjacent to the Site, Cambium staff conducted a bat maternity roost survey using the methods detailed in the *Bat and Bat Habitats: Guidelines for Wind Power Projects* (Ontario Ministry of Natural Resources, 2011). The protocol requires that for sites with ≤ 10 ha of treed forest or swamp ELC community types, a minimum of 10 randomly selected plots are to be surveyed, with an additional plot added per hectare, to a maximum of 35 plots for the project area. At each plot, the number of snag/cavity trees ≥ 25 cm DBH within a 12.6 m radius (0.05 ha) is to be recorded. A calculation is then made to determine the snag density and if the number of cavity trees found meets the criteria for maternity surveys. Due to the relatively small size of the forested area on the Site, the entire woodland was surveyed for snags and trees with cavities suitable for bats.



4.0 Characterization of Natural Features and Functions

4.1 Landscape Position, Topography, and Existing Land Use

The Site consists of a residential dwelling and woodlands and is surrounded by existing residential properties. The subject lot has relatively flat topography with a slight slope to the southwest. Soils in the area were documented as sandy, with evidence of recent test pits throughout the wooded area. From a natural landscape perspective, the Site is located in Ecoregion 6E-6 of Ontario (Crins, Gray, Uhlig, & Wester, 2009).

The Site contained an existing dwelling and accessory structure, accessed via Robert Street East.

4.2 Vegetation Communities

Three vegetation community types were identified on the Site. The vegetation communities were initially classified through aerial photograph interpretation and were subsequently confirmed through the vegetation inventory. The vegetation communities identified on the Site are summarized in Table 2 and their extents are illustrated on Figure 2. A list of identified species and representative photos for each community are provided in Appendix A.

Table 2 Vegetation Communities

No.	ELC Code	Community Description	Community Type	S -Rank
1	FOCM6-3	Dry - Fresh Scotch Pine Naturalized Coniferous Plantation	Terrestrial	N/A
2	FOD5-1	Dry – Fresh Sugar Maple Deciduous Forest	Terrestrial	S5
3	CVR	Cultural Developed	Terrestrial	N/A

A search for butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; no butternut were identified.

4.3 Birds and Habitat Features

Background information available from the OBBA (10 km UTM Grid Square #17NK85) identified a total of 117 bird species within the general area of the Site. Of these, ten species are provincially listed SAR (Government of Ontario, 2019). The identified SAR are included in the habitat-based screening for SAR summarized in Section 4.7.

The Site provides limited bird habitat consisting of forest edge and culturally developed areas. No nests were observed on the existing structures. Incidental bird observations included, Canada Goose (*Branta canadensis*), Black-capped Chickadee (*Poecile atricapillus*), and American Crow (*Corvus brachyrhynchos*).

4.4 Amphibians and Habitat Features

Background information available from the ORAA (10 km UTM Grid Square #17NK85) identified a total of nine amphibian species within the general area of the Site. None of these species are provincially listed SAR (Government of Ontario, 2019).

The Site does not provide suitable habitat for amphibian breeding as no evidence of vernal pools, wetlands, or watercourses were present.

4.5 Reptiles and Habitat Features

Background information available from the ORAA (10 km UTM Grid Square #17NK85) identified a total of 12 reptile species within the general area of the Site. Of these, six species are provincially listed SAR (Government of Ontario, 2019). The identified SAR are included in the habitat-based screening for SAR (Appendix B), summarized in Section 4.7.

No candidate hibernaculum or nesting sites suitable for reptiles were observed during the 2020 field investigation.

4.6 Mammals and Habitat Features

No candidate bat maternity roost trees were identified through the site-wide survey. It should be noted that less than 5% of the trees on the Site met the minimum size criteria in the



protocol (>25 dbh). The roof structure on the existing dwelling may provide roosting habitat for bat species that prefer buildings (e.g., Little Brown Myotis). If this structure is to be demolished during the active season for bats (June through October), to accommodate the proposed development, a bat inspection should be completed by a qualified professional in advance, to confirm absence of SAR.

Incidental mammal observations on the Site were limited to Eastern Grey Squirrel (*Sciurus carolinensis*). Due to its setting and proximity to adjacent residential developments, the Site is likely only used by small mammal species common to woodlands in semi-urban areas of south-central Ontario, including Striped Skunk (*Mephitis mephitis*), Red Squirrel (*Sciurus vulgaris*), and Raccoon (*Procyon lotor*).

4.7 Species at Risk

Cambium employed a habitat-based screening, supplemented with direct field surveys when necessary, to identify at-risk species and/or their habitats, on or adjacent to the Site. A detailed habitat suitability analysis is provided in Appendix B and a discussion of the results is provided below.

Based on our screening, the Site and/or adjacent lands have the potential to provide habitat for the following species:

Special Concern Species (not afforded habitat protection under the ESA)

- Eastern Wood-pewee (*Contopus virens*)
- Wood Thrush (*Hylocichla mustelina*)

Threatened and Endangered Species (habitat protected under the ESA)

- Little Brown Myotis (*Myotis lucifugus*; endangered)
- Northern Myotis (*Myotis septentrionalis*; endangered)
- Eastern Small-footed Myotis (*Myotis leibii*; endangered)
- Tri-coloured Bat (*Perimyotis subflavus*; endangered)



- Butternut (*Juglans cinerea*; endangered)

The forest edges and treed areas of the Site may provide suitable habitat for Eastern Wood-pewee and Wood Thrush, two forest bird SAR. These species are provincially listed as 'Special Concern'; however, 'Special Concern' species are not afforded habitat protection under the ESA. Despite their status, both of these species are relatively commonly found in woodlands in Simcoe County. Mitigation measures relating to the protection of birds is provided in Section 5.1.

As detailed in Section 4.6, it was determined that the Site does not provide significant maternity roosting habitat for SAR bats.

A search for butternut (*Juglans cinerea*; provincially endangered) was completed as part of the vegetation survey; no butternut were identified.

Natural Heritage Information Centre (NHIC) database records applicable to the Site (UTM Grid Square 17NK8558) include a SAR occurrence of Massasauga (*Sistrurus catenatus pop. 1*). It was determined that the Site does not provide suitable habitat for this species.



5.0 Recommendations

The proposed development of the property should not have a significant negative impact on SAR or SAR habitat, provided that the following mitigation measures and best practices are implemented. Recommendations have been made to minimize impacts during site preparation, construction, and post-construction activities.

5.1 General

- Migratory bird nests, eggs and young are protected under the *Migratory Birds Convention Act*, 1994. Vegetation clearing on the Site should occur outside the breeding bird season, which extends from April 15 to August 15 in the area (as per Environment and Climate Change Canada Guidelines). In the event that construction is scheduled to proceed during the breeding season, the area should be investigated for the presence of breeding birds and nests containing eggs and/or young, prior to any site alteration. Any nests observed should be left undisturbed until young have fledged or the nest is determined to be inactive.
- Prior to the commencement of construction activities on the Site, the development envelope should be searched for evidence of wildlife. If any individuals are encountered, they should be photographed and allowed time to move out of harm's way. SAR observations should be reported to the Ministry of Environment, Conservation and Parks immediately.
- While the Site does not provide ideal habitat for turtles, workers should be aware of the nesting season for turtles which is May 15 to August 15.
- If the existing dwelling on the Site is to be demolished during the active season for bats (June through October), to accommodate the proposed development, a bat inspection should be completed by a qualified professional in advance.



6.0 Closing

Based on our assessment of existing conditions and review of available records, the proposed development is unlikely to negatively impact SAR or their habitats, provided that the recommendations listed in Section 5.0 are adhered to. The information presented herein demonstrates that the proposed development can be carried out in a manner that is compliant with applicable SAR policy and legislation.

Respectfully submitted,

Cambium Inc.

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Appended Figures

**SPECIES AT RISK
ASSESSMENT**
 INTERSPEC CONSTRUCTION
 2006316 ONTARIO INC.
 123 Robert Street East,
 Penetanguishene, Ontario

LEGEND

-  Major Road
-  Minor Road
-  Water Area
-  Site (approximate)

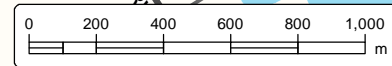
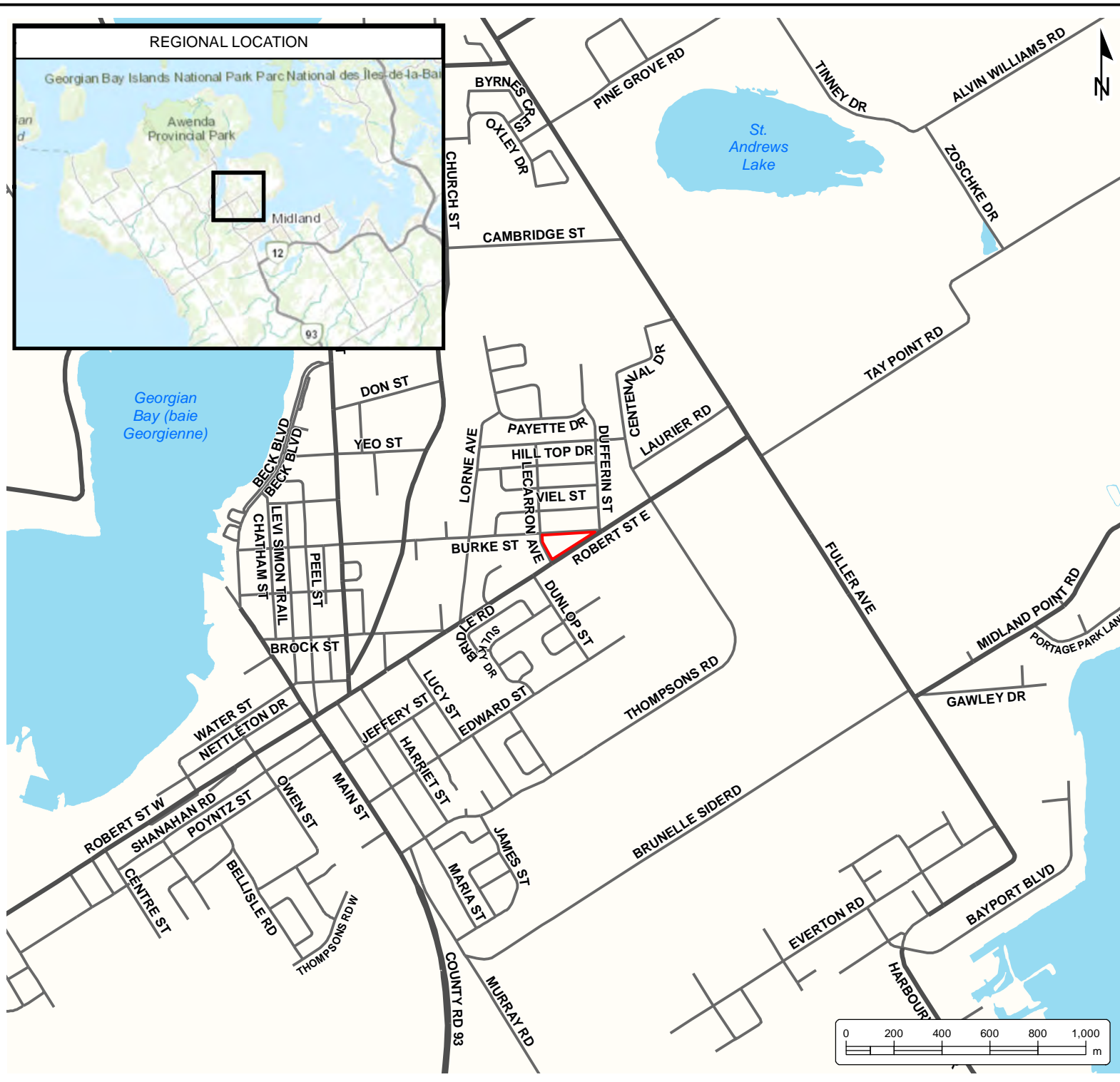
Notes:
 - Site boundary data was obtained from Simcoe County online GIS database.
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources and Forestry or the Ontario Government).
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
 - Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.



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SITE LOCATION

Project No.: 11594-001	Date: October 2020
Scale: 1:22,500	Rev.: NAD 1983 UTM Zone 17N
Created by: MAT	Checked by: JPP
Figure: 1	



O:\GIS\MXDs\11500-11594-001\InterSpec Construction 2006316 Ont. Inc. - SAR Assessment 123 Robert St. E\2020-10-19 FIG 2 - Site Natural Heritage Features.mxd



SPECIES AT RISK ASSESSMENT
 INTERSPEC CONSTRUCTION
 2006316 ONTARIO INC.
 123 Robert Street East,
 Penetanguishene, Ontario

LEGEND

- Vegetation Community
- Contour 5m Interval (Minor)
- Site (approximate)

VEGETATION COMMUNITY

- 1: FOCM6-3;** Dry - Fresh Scotch Pine Naturalized Coniferous Forest
- 2: FOD5-1;** Dry - Fresh Sugar Maple Deciduous Forest
- 3: CVR;** Cultural Developed

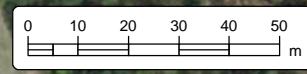
Notes:
 - Imagery and site boundaries were obtained from Simcoe County online GIS database.
 - Base mapping features are © Queen's Printer of Ontario, 2019 (this does not constitute an endorsement by the Ministry of Natural Resources or the Ontario Government).
 - Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
 - Cambium Inc. makes every effort to ensure this map is free from errors but cannot be held responsible for any damages due to error or omissions. This map should not be used for navigation or legal purposes. It is intended for general reference use only.



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SITE NATURAL HERITAGE FEATURES

Project No.:	11594-001	Date:	October 2020
Scale:	1:1,500	Rev.:	
Created by:	MAT	Checked by:	JPP
		Figure:	2





Appendix A
Vegetation Species List



VEGETATION COMMUNITY CLASSIFICATION:

FOCM6-3 Dry - Fresh Scotch
Pine Naturalized Coniferous
Plantation Type ForestLOCATION: PenetanguisheneCOORDINATES: 44.77530582988509, -
79.92104785797876PROJECT NUMBER: 11594-001DATE: October 01,
2020PROJECT
MANAGER: Jeremy PrahFIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	COSEWIC	SARO	CoC	S-Rank
Eastern White Pine	<i>Pinus strobus</i>	Pinaceae	-	-	4	S5
European Mountain-ash	<i>Sorbus aucuparia</i>	Rosaceae	-	-	-	SNA
Indian-pipe	<i>Monotropa uniflora</i>	Monotropaceae	-	-	6	S5
Large-leaved Aster	<i>Eurybia macrophylla</i>	Asteraceae	-	-	5	S5
Northern Red Oak	<i>Quercus rubra</i>	Fagaceae	-	-	6	S5
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	-	-	2	S5
Scots Pine	<i>Pinus sylvestris</i> var. <i>sylvestris</i>	Pinaceae	-	-	-	SNA
Staghorn Sumac	<i>Rhus typhina</i>	Anacardiaceae	-	-	1	S5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	-	-	4	S5
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	Caprifoliaceae	-	-	-	SNA
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	-	-	6	S4?
White Ash	<i>Fraxinus americana</i>	Oleaceae	-	-	4	S4

NOTES: Formerly a Scots pine plantation now regenerating with Sugar maple and Red oak.

VEGETATION COMMUNITY PHOTOS:





VEGETATION COMMUNITY CLASSIFICATION:

FOD5-1 Dry-Fresh Sugar
Maple Deciduous Forest –
Community 2

LOCATION: Penetanguishene

COORDINATES: 44.77541592589671, -
79.92033517761647

PROJECT NUMBER: 11594-001

DATE: October 01,
2020

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	COSEWIC	SARO	CoC	S-Rank
American Basswood	<i>Tilia americana</i>	Tiliaceae	-	-	4	S5
Black Cherry	<i>Prunus serotina var. serotina</i>	Rosaceae	-	-	3	S5
Calico Aster	<i>Symphotrichum lateriflorum var. lateriflorum</i>	Asteraceae	-	-	3	S5
Choke Cherry	<i>Prunus virginiana var. virginiana</i>	Rosaceae	-	-	2	S5
Common Apple	<i>Malus pumila</i>	Rosaceae	-	-	-	SNA
Large False Solomon's Seal	<i>Maianthemum racemosum</i>	Liliaceae	-	-	4	S5
Large-leaved Aster	<i>Eurybia macrophylla</i>	Asteraceae	-	-	5	S5
Northern Red Oak	<i>Quercus rubra</i>	Fagaceae	-	-	6	S5
Pennsylvania Sedge	<i>Carex pensylvanica</i>	Cyperaceae	-	-	5	S5
Poison Ivy	<i>Toxicodendron radicans</i>	Anacardiaceae	-	-	2	S5
Scots Pine	<i>Pinus sylvestris var. sylvestris</i>	Pinaceae	-	-	-	SNA
Spreading Dogbane	<i>Apocynum androsaemifolium</i>	Apocynaceae	-	-	3	S5
Staghorn Sumac	<i>Rhus typhina</i>	Anacardiaceae	-	-	1	S5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	-	-	4	S5
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	Caprifoliaceae	-	-	-	SNA
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	Vitaceae	-	-	6	S4?
White Ash	<i>Fraxinus americana</i>	Oleaceae	-	-	4	S4
White Heath Aster	<i>Symphotrichum ericoides var. ericoides</i>	Asteraceae	-	-	4	S5
Wild Lily-of-the-valley	<i>Maianthemum canadense ssp. canadense</i>	Liliaceae	-	-	5	S5
Yellow Avens	<i>Geum aleppicum</i>	Rosaceae	-	-	2	S5

NOTES: FOD5-1 Community 2

VEGETATION COMMUNITY PHOTOS:





VEGETATION COMMUNITY CLASSIFICATION: CVR - Cultural Developed;
Community 3

LOCATION: Penetanguishene

COORDINATES: 44.77504695757445, -
79.92024655566078

PROJECT NUMBER: 11594-001

DATE: October 01,
2020

PROJECT
MANAGER: Jeremy Prah

FIELD STAFF: Ernie Silhanek

FIELD SHEET – Vegetation Species List

Common Name	Scientific Name	Family	COSEWIC	SARO	CoC	S-Rank
American Elm	<i>Ulmus americana</i>	Ulmaceae	-	-	3	S5
Common Dandelion	<i>Taraxacum officinale</i>	Asteraceae	-	-	-	SNA
Common Hawkweed	<i>Hieracium vulgatum</i>	Asteraceae	-	-	-	SNA
Common Lilac	<i>Syringa vulgaris</i>	Oleaceae	-	-	-	SNA
Common Ragweed	<i>Ambrosia artemisiifolia</i>	Asteraceae	-	-	0	S5
Curly Dock	<i>Rumex crispus</i>	Polygonaceae	-	-	-	SNA
English Plantain	<i>Plantago lanceolata</i>	Plantaginaceae	-	-	-	SNA
Ground Ivy	<i>Glechoma hederacea</i>	Lamiaceae	-	-	-	SNA
Kentucky Bluegrass	<i>Poa pratensis ssp. pratensis</i>	Poaceae	-	-	-	SNA
Northern Red Oak	<i>Quercus rubra</i>	Fagaceae	-	-	6	S5
Orange Daylily	<i>Hemerocallis fulva</i>	Liliaceae	-	-	-	SNA
Staghorn Sumac	<i>Rhus typhina</i>	Anacardiaceae	-	-	1	S5
Sugar Maple	<i>Acer saccharum</i>	Aceraceae	-	-	4	S5
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	Caprifoliaceae	-	-	-	SNA
White Ash	<i>Fraxinus americana</i>	Oleaceae	-	-	4	S4
White Clover	<i>Trifolium repens</i>	Fabaceae	-	-	-	SNA
White Heath Aster	<i>Symphotrichum ericoides var. ericoides</i>	Asteraceae	-	-	4	S5

VEGETATION COMMUNITY PHOTOS:





Appendix B
Species at Risk Screening

APPENDIX: Species at Risk Habitat-Based Screening - Simcoe County

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	HABITAT-BASED SCREENING (High/Moderate/Low)	RATIONALE
		SARA	SARO				
Birds							
Bald Eagle	<i>Haliaeetus leucocephalus</i>	No Status	SC	S2N,S4B	The Bald Eagle is a bird of prey with a white head, neck and tail, a massive bright yellow beak, powerful legs, and a wingspan of over 2 m. It nests in a variety of habitats and forest types, almost always near a major lake or river where they do most of their hunting. These nests are usually on islands in freshwater lakes or in large trees such as the pine and poplar. During the winter, they may also be found near open bodies of water that do not freeze (1).	Low	No suitable habitat present.
Bank Swallow	<i>Riparia riparia</i>	THR	THR	S4B	The Bank Swallow is a small songbird of around 12 cm long with a distinctive dark breast band, that flies with quick and erratic wingbeats (1). It nests in burrows in natural and human-made settings where there are vertical faces in silt and sand deposits. This can include banks of rivers and lakes, bluffs, active sand and gravel pits, road cuts and stockpiles of soils. However, they prefer sand-silt substrates for excavating their nest burrows. They often use large wetlands as communal nocturnal roosts post-breeding or during wintering periods (2).	Low	No suitable habitat present.
Barn Swallow	<i>Hirundo rustica</i>	THR	THR	S4B	The Barn Swallow is a mid-sized songbird with steel-blue backs and wings, glossy in males, and a line of white spots across its upper tail. It lives in a variety of open habitats for foraging, such as grassy fields, pastures, certain agricultural crops, shorelines, cottage areas, wetlands, or subarctic tundra (2). They prefer to nest within human made structures such as barns, bridges, and culverts. Barn Swallow nests are cup-shaped and made of mud, typically attached to horizontal beams or vertical walls underneath an overhang (1).	Low	No suitable habitat present.
Black Tern	<i>Chlidonias niger</i>	No Status	SC	S3B	The Black Tern is a small waterbird with a forked tail, straight pointed bill, slender shape, and black head during breeding season. It builds floating nests in loose colonies in shallow marshes, with a preference for cattails. They breed primarily in the marshes along the edges of the Great Lakes, but may also use wetlands further north if suitable (1).	Low	No suitable habitat present.
Bobolink	<i>Dolichonyx oryzivorus</i>	THR	THR	S4B	The Bobolink is a mid-sized songbird of tan colour with black stripes, except for males during summer breeding season who are black with a white back and yellow collar. It prefers tall, grassy meadows, hayfields and some croplands, and feeds (largely on insects) on the ground in dense grasses (1). It tends to nest in forage crops: hayfields and pastures dominated by species including clover, bluegrass, and broadleaf plants (2).	Low	No suitable habitat present.
Canada Warbler	<i>Cardellina canadensis</i>	THR	SC	S4B	The Canada Warbler is a small songbird with bright yellow underparts and bluish-grey back and tail (1). It can be found in a variety of forest types, but is most abundant in moist, mixed forests with a well-developed, dense shrub layer. Nests are usually located on or near the ground on mossy logs, and along stream banks (3).	Low	No suitable habitat present.

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COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	HABITAT-BASED SCREENING (High/Moderate/Low)	RATIONALE
		SARA	SARO	S-RANK			
Cerulean Warbler	<i>Setophaga cerulea</i>	END	THR	S3B	The Cerulean Warbler, a small songbird, is blue-green with white eyebrows and two prominent white wing bars (1). It requires relatively large tracts of mature deciduous forest (>100 ha), and nests in older, second-growth deciduous forests. During breeding season, it is found in relatively large tracts of mature deciduous forests that feature large, tall trees and an open understorey (4).	Low	No suitable habitat present.
Chimney Swift	<i>Chaetura pelagica</i>	THR	THR	S4B,S4N	The Chimney Swift is a small bird, between 12 and 14 cm, with a brown, cigar-shaped body, slender wings, and an erratic flight pattern. Prior to settlement, the Chimney Swift would mainly nest in cave walls and hollow trees. Now, it is found mostly near urban and suburban areas where the presence of chimneys or other manmade structures provide nesting and roosting habitat. They also tend to stay in habitat close to the water (1).	Low	No suitable habitat present.
Common Nighthawk	<i>Chordeiles minor</i>	THR	SC	S4B	The Common Nighthawk is a medium-sized bird with long, pointed wings, a long tail with a notch, and and large eyes. Its plumage of dark brown with black and white specks blends with its roost site. It is typically found in open areas such as gravel beaches, rock outcrops and burned woodlands, that have little to no ground vegetation. This species can also be found in highly disturbed locations such as clear cuts, mine tailing areas, cultivated fields, urban parks, gravel roads, and orchards (1).	Low	No suitable habitat present.
Eastern Meadowlark	<i>Sturnella magna</i>	THR	THR	S4B	The Eastern Meadowlark is a medium-sized migratory songbird with a bright yellow throat and belly, a black V shape on its chest, and a pointed bill. It prefers pastures and hayfields, but is also found to breed in orchards, shrubby fields, human-use areas such as airports and roadsides, or other open areas. The Eastern Meadowlark can nest from early May to mid-August, in nests that are built on the ground and well-camouflaged with a roof woven from grasses (1).	Low	No suitable habitat present.
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	THR	S4B	The Eastern Whip-poor-will is a medium-sized bird with mottled brown and grey feathers to blend in with its surroundings, a large flattened head, and small bill. They are usually found in areas with a mix of open and forested areas such as patchy forests with clearings, forests that are regenerating after major disturbances, savannahs, open woodlands or openings in more mature forests. Breeding habitat is dependent on forest structure rather than composition, although common tree associations are pine and oak, and it nests directly on the forest floor (2). The species prefers to nest in semi-open or patchy forests with clearings as it forages in open areas and uses forested areas for roosting (1).	Low	No suitable habitat present.

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		SARA	SARO				
Eastern Wood-Pewee	<i>Contopus virens</i>	SC	SC	S4B	The Eastern Wood-pewee is a species of 'flycatcher', a bird that eats flying insects. It grows to approximately 15 cm, has greyish-olive upper parts and pale bars on its wings. This species lives in the mid-canopy layer of forest clearings and edges of deciduous and mixed forests. It prefers intermediate-age forest stands with little understory vegetation (1). It typically creates nests on tree branches 2-12 m in height (2).	Moderate	The treed areas on Site may provide suitable habitat.
Evening Grosbeak	<i>Coccothraustes vespertinus</i>	No Status	SC	S4B	The Evening Grosbeak is a large songbird with a thick greenish bill. It is a social bird that is often found in flocks, particularly during the winter months. Their preferred habitat is thick coniferous forest. During their breeding season, they are generally found in open, mature mixed forests dominated by Firs, White Spruce, or Trembling Aspen (1).	Low	No suitable habitat present.
Golden Winged Warbler	<i>Vermivora chrysoptera</i>	THR	SC	S4B	The Golden-winged Warbler is a small songbird with distinctive yellow wing patches and patches behind their eyes. It inhabits early successional habitat of old fields and favour areas where trees are spread out or forest edges to use for perching, singing, and searching for food. They seem to prefer regeneration zones with young shrub growth, surrounded by mature forest, locations that have recently been disturbed, such as field edges, hydro or utility right-of-ways, or logged areas for their breeding sites; often frequenting clusters of herbaceous plants and low bushes (1).	Low	No suitable habitat present.
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	SC	S4B	The Grasshopper Sparrow is a small songbird with a streaked back, a white stripe down the center of its crown, a flattish head, and a conical beak. It inhabits open grasslands and prairies with well-drained soil, preferring areas that are sparsely vegetated. It will also nest in hayfields and pastures, as well as alvars and occasionally grain crops such as barley (1).	Low	No suitable habitat present.
King Rail	<i>Rallus elegans</i>	END	END	S2B	The King Rail is a large bird, standing at around 40 cm tall, with a long, curved bill, orange chest and neck, and black sides with vertical white bars. This species prefers densely vegetated freshwater marshes with open shallow water and shrub thicket areas. Current records for Ontario suggest that these birds prefer sites within coastal marshes of the Great Lakes. Most breeding pairs left in Ontario are found in wetlands bordering Lake St Clair or coastal marshes along Lakes Erie and Ontario (1).	Low	No suitable habitat present.
Least Bittern	<i>Ixobrychus exilis</i>	THR	THR	S4B	The Least Bittern is a small member of the heron family, reaching around 30 cm in length. It has brown and beige plumage with chestnut patches on its wings (1). The species nests in marshes (> 5 - 10 ha) and swamps dominated by emergent vegetation, preferably cattails, interspersed with patches of woody vegetation and open water. They require dense vegetation and open water with stable levels within 10 m for nesting, and access to clear, open water for foraging (4).	Low	No suitable habitat present.

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COMMON NAME	SCIENTIFIC NAME	Federal	Provincial		SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	HABITAT-BASED SCREENING (High/Moderate/Low)	RATIONALE
		SARA	SARO	S-RANK			
Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	END	S2B	The Loggerhead Shrike is a small bird with a black, hooked bill, grey crown, and white throat and chest. This species has specific habitat requirements that are dependent on active livestock grazing, or grassland areas that have naturally short grass cover (i.e. alvar communities). They also require spiny, multi-branched shrubs, or barbed fencing, to catch prey. They prefer grassland habitats that have sporadic occurrences of low trees and shrubs; particularly hawthorn species, which are used as part of their feeding behaviour (1).	Low	No suitable habitat present.
Olive-sided Flycatcher	<i>Contopus cooperi</i>	THR	SC	S4B	The Olive-sided Flycatcher is a medium-sized songbird with olive colouring, often seen perching on top of tall trees waiting to catch their prey. It prefers open areas along natural mature forest edges, forest edges near natural openings such as rivers or swamps, human-made openings, or burned forest openings with numbers of dead trees. Breeding habitat usually consists of coniferous or mixed forests adjacent to rivers or wetlands, in Ontario often nesting in White and Black Spruce, Jack Pine, and Balsam Fir (1).	Low	No suitable habitat present.
Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	S3B	The Peregrine Falcon is a bird of prey with a slate blue back, cream-coloured chest with dark markings, and pointed wings spanning around 1 m. It also has bright yellow feet and legs. This species can be found nesting on tall, steep cliff ledges close to large bodies of water. They prefer open habitats such as wetlands, tundra, savanna, sea coasts and mountain meadows for hunting, but may also be found above open forests. This species has also adapted well to living and nesting in urban areas, and has been documented using the ledges of tall buildings and other tall man-made structures for perches and nesting (1).	Low	No suitable habitat present.
Piping plover	<i>Charadrius melodus</i>	END	END	S1B	The Piping Plover is a small shorebird with light colouring, a stubby orange bill and orange legs. This species almost exclusively nests on dry sandy or gravelly beaches above the high-water mark to avoid waves. It can be found pecking the sand, searching for small pools of water for insects and small crustaceans to consume. Although not particularly common in Ontario, it is found along the shores of the Great Lakes, and in the Lake of the Woods in northwestern Ontario (1).	Low	No suitable habitat present.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	THR	SC	S4B	The Red-headed Woodpecker is a mid-sized bird, at around 20 cm long, with a vivid red head, neck and breast as well a strong bill. The species can be found in open woodland and woodland edges, often near man-made landscapes such as parks, golf courses and cemeteries. These areas must contain a large number of dead trees for perching and nesting (1).	Low	No suitable habitat present.

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		SARA	SARO	S-RANK			
Short-eared owl	<i>Asio flammeus</i>	SC	SC	S2N,S4B	The Short-eared Owl has a large round head with small tufts of feathers, long wings, a short tail, and cryptic colouring of brown streaks. This species is found in scattered pockets across the province where suitable open habitat, including grasslands, tundra, peat bogs and marsh, can be found in sufficient quantities. Adults build nests on the ground in grassy areas and occasionally agricultural fields (1). The main factor influencing their choice in habitat is believed to be an abundance of their food source, primarily rodents and other small mammals (2).	Low	No suitable habitat present.
Wood Thrush	<i>Hylocichla mustelina</i>	THR	SC	S4B	The Wood Thrush is a medium-sized songbird of around 20 cm with rusty brown coloured upper parts and white underparts with large dark spots. It breeds in deciduous and mixed forests with moderate understories, shade and abundant leaf litter where it forages for food, including larval and adult insects as well as plant material. They prefer moist stands of trees with well-developed undergrowth and tall trees for perches (1).	Moderate	The treed areas on Site may provide suitable habitat.
Yellow Rail	<i>Coturnicops noveboracensis</i>	SC	SC	S4B	The Yellow Rail is a small, quail-like marsh bird with a short yellow or black bill, short tail, with yellowish and black streaks on its back and white wing patches. This species is mainly found in the Hudson Bay Lowlands region, and is only found in localized marshes in southern Ontario. It is a secretive bird that lives deep within the reeds, sedges, and marshes of shallow wetlands which nest on the ground in areas that have an overlying mat of dry vegetation that can be used for nest building (1).	Low	No suitable habitat present.
Fish							
American Eel	<i>Anguilla rostrata</i>	No Status	END	S1?	The American Eel is a long, slender bodied fish, with one long fin extending down the back and around the tail, and two small pectoral fins. It has thick lips, and a protruding lower jaw that extends out above the upper jaw. At the juvenile stage, they swim up the St. Lawrence River to reach Lake Ontario and connected tributaries where they will remain for 8 to 23 years before migrating back to their spawning grounds. In Ontario, the American eel prefers mud, sand or gravel substrates during the juvenile stage when they reside primarily in the benthic zone of waterbodies. More mature eels are able to thrive in most environments provided there is available cover during daylight hours, and the habitat is accessible (2).	Low	No suitable habitat present.
Lake Sturgeon	<i>Acipenser fulvescens</i>	No Status	END	S2	The Lake Sturgeon, a large freshwater fish, has an extended snout with four whisker-like organs hanging near the mouth and is dark to light brown or grey on its back and sides with a lighter belly. In Ontario, this fish is found in the rivers of the Hudson Bay Basin, the Great Lakes basin, and their connecting waterways. Lake Sturgeon's live almost exclusively in freshwater lakes and rivers with soft bottoms of mud, sand or gravel and are usually found at depths of 5 to 20 m. They spawn in relatively shallow, fast-flowing water or if available deeper water habitat as well (1).	Low	No suitable habitat present.
Herptiles							

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		SARA	SARO				
Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	THR	S3	Blanding's Turtles are identifiable by their bright yellow throat and chin and domed shell. They spend the majority of their life cycle in the aquatic environment, usually in large wetlands or shallow lakes with high densities of water plants (1). These turtles prefer shallow, nutrient rich water with organic sediment and dense vegetation. They use terrestrial sites for travel between habitat patches and to lay clutches of eggs, often going hundreds of meters from their nearest water body. Blanding's Turtles nest in dry coniferous and mixed forest habitats, as well as fields and roadsides (2). From late October until the end of April, they hibernate in the mud at the bottom of permanent water bodies (1).	Low	No suitable habitat present.
Eastern Musk Turtle	<i>Sternotherus odoratus</i>	SC	SC	S3	The Eastern Musk Turtle is small with a narrow carapace, a dark brown body and two light stripes on each side of their head (5). It is a small freshwater turtle found primarily in slow moving water bodies with abundant emergent vegetation and mucky bottoms along the southern edge of the Canadian Shield within which they burrow into overwinter. Nesting sites vary, but must be close to the water and exposed to direct sunlight (1).	Low	No suitable habitat present.
Northern Map Turtle	<i>Graptemys geographica</i>	SC	SC	S3	The Northern Map Turtle is a medium sized turtle identified by its carapace's map contour-like patterning. It lives in larger lakes and rivers, requiring high water quality to support their primary prey species: molluscs. This species can often be seen in large groups basking together on rocks and logs. In the winter, the Northern Map Turtle can be found hibernating on the bottom of slow-moving rivers (1).	Low	No suitable habitat present.
Snapping Turtle	<i>Chelydra serpentina</i>	SC	SC	S3	The Snapping Turtle, with its large serrated carapace, small plastron, and spiked tail, is Canada's largest freshwater turtle (5). It spends the majority of its life in water, preferring shallow water with soft mud and leaf litter, and will travel upland to gravel or sandy embankments, roadsides, along railway lines or beaches to lay their eggs (1).	Low	No suitable habitat present.
Spotted Turtle	<i>Clemmys guttata</i>	END	END	S2	The Spotted Turtle is named after the distinct yellow spots on its carapace. The species is semi-aquatic and prefers ponds, marshes, bogs and even ditches with slow-moving, unpolluted water and an abundant supply of aquatic vegetation. This species usually hibernates in wetlands or seasonally wet areas with structures such as overhanging banks, hummocks, tree roots, or aquatic animal burrows (1).	Low	No suitable habitat present.
Wood Turtle	<i>Glyptemys insculpta</i>	THR	END	S2	The Wood Turtle has orange coloured front legs, neck and chin and a sculpted carapace with raised, pyramidal scutes (5). They prefer clear rivers and streams that have moderate current, and sandy or gravelly substrates. This species spends more time on land than other turtle species including in meadows, swamps and fields. Wooded areas are an essential habitat component, and the species uses aquatic habitats for hibernation and mating. Nesting occurs in areas with sandy soil and abundant light (1).	Low	No suitable habitat present.

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		SARA	SARO	S-RANK			
Eastern Fox Snake (Georgian Bay GLSL Population)	<i>Pantherophis gloydi</i>	END	THR	S3	The Eastern Foxsnake has a rusty orange head and a golden-brown body with dark blotches. The Georgian Bay population predominantly uses open habitats along shorelines (e.g., coastal rock barrens and meadow marshes) as habitat during the active season. The foxsnakes inhabiting this coastline do not venture far inland, restricting the majority of their activity to within 150 m of the water (4). The females require rotten logs, stumps, compost or decaying leaf piles for incubating their eggs (5).	Low	No suitable habitat present.
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	THR	THR	S3	The Eastern Hog-nosed Snake can be a variety of colours and patterns so is most easily identified by its flattened, upturned nose. They prefer sandy well-drained habitats such as beaches and dry forests because they lay their eggs, hibernate and burrow in these areas. The main diet of this snake is toads and frogs, so they usually stay close to water including marshes and swamps, where they have an increased chance of finding their preferred prey (1).	Low	No suitable habitat present.
Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	SC	S4	The Eastern Ribbonsnake is slender with three bright yellow stripes running down its back and sides and a white crescent in front of each eye. This snake is usually found close to water as they are strong swimmers, often fleeing predators by diving into shallow water. It prefers wetland habitats where its prey species, frogs and small fish, are abundant. Over winter, they congregate in underground burrows or rock crevices to hibernate (1).	Low	No suitable habitat present.
Massasauga Rattlesnake (Great Lakes - St. Lawrence population)	<i>Sistrurus catenatus</i>	THR	THR	S3	The Massasauga, Ontario's venomous snake, can be identified by its rattle, vertical pupils, and triangular head. It inhabits a range of different habitats throughout Ontario, including tall grass prairies, marshes, bogs, shorelines, forests, and alvars. Within these habitats they require open areas to warm themselves in the sun (1).	Low	No suitable habitat present.
Common Five-lined Skink (Southern Shield Population)	<i>Plestiodon fasciatus</i>	SC	SC	S3	The Common Five-lined Skink is Ontario's only lizard species. Its Southern Shield population can be found underneath rocks on open bedrock in forests and like to bask on sunny rocks and logs. They hibernate in crevices among rocks or buried in the soil (1). They hibernate in groups under rocks and tree stumps or in rotting wood (5).	Low	No suitable habitat present.
Invertebrates							
Gypsy Cuckoo Bumble Bee	<i>Bombus bohemicus</i>	END	END	S1S2	The Gypsy Cuckoo Bumble Bee is a medium-sized bumble bee that resides in a wide range of habitats such as open meadows, agricultural and urban areas, boreal forest, and woodlands. In Ontario, it was historically found throughout the province; however, in recent years it is only known to occur in Pinery Provincial Park (1).	Low	Site is not within or near known range.
Monarch Butterfly	<i>Danaus plexippus</i>	SC	SC	S2N,S4B	The Monarch is an orange and black butterfly with small white spots and a wingspan of around 10 cm. It relies on milkweed plants as a food source for growing caterpillars, but the adult butterflies forage in diverse habitats for nectar from wildflowers (1).	Low	No suitable habitat present.

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		SARA	SARO				
West Virginia White	<i>Pieris virginiensis</i>	No Status	SC	S3	The West Virginia White is a small, dingy white butterfly. This species is found in moist deciduous woods, and requires a supply of toothwort, a small, spring-blooming plant, which provides the only source of food for its larvae. The West Virginia White is found mostly in the central and southern parts of Ontario, but its range extends north to Manitoulin and St. Joseph islands (1).	Low	No suitable habitat present.
Mammals							
Tri-colored Bat	<i>Perimyotis subflavus</i>	END	END	S3?	The Tri-colored Bat is small, with pale brown with orange-red forearms, muzzle, and ears. It is named for the black, yellow, and brown hairs on its back. It is considered rare in this region of Ontario which is at the northernmost limit of the natural range. These bats prefer to nest in foliage, tree cavities and woodpecker holes, but are occasionally found in buildings; though this is not their preferred habitat. Winter hibernation takes place in caves, mines and deep crevices. Tri-colored Bats prefer an open forest habitat type in proximity to water (6).	Moderate	The treed areas on Site may provide suitable habitat.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	No Status	END	S2S3	The Eastern Small-footed Myotis has fur with black roots and shiny brown tips as well as very small feet. In the spring and summer, the Eastern Small-footed Myotis will roost in a variety of habitats, including in or under rocks, in rock outcrops, in buildings, under bridges, or in caves, mines, or hollow trees. They change their roosting locations daily and hunt at night for insects. They hibernate in winter, often in caves and abandoned mines choosing colder and drier sites than other similar bats (1).	Moderate	The treed areas on Site may provide suitable habitat.
Little Brown Myotis	<i>Myotis lucifugus</i>	END	END	S4	The Little Brown Myotis has glossy brown fur and a fleshy projection covering the entrance to its ears. This species roosts in trees and buildings, often selecting attics, abandoned buildings and barns for summer colonies where they can raise their young. Little Brown Bats hibernate from October/November to March/April, most often in caves or abandoned mines that are humid and remain above freezing (1).	Moderate	The treed areas on Site may provide suitable habitat.
Northern Myotis	<i>Myotis septentrionalis</i>	END	END	S3	The Northern Myotis has dull yellow-brown fur with pale bellies and long, rounded ears. This species is found in boreal forests, roosting under loose bark and in the cavities of trees. These bats hibernate from October/November to March/April, most often in caves or abandoned mines (1).	Moderate	The treed areas on Site may provide suitable habitat.
Algonquin Wolf	<i>Canis lycaon</i>	SC	THR	S4	Formerly called the Eastern Wolf, this canine was recently renamed the Algonquin Wolf. In the southern portion of the province, this species prefers deciduous and mixed forest landscapes while their northern range include mixed and coniferous forests. It is most prevalent in areas with abundant prey species which include Beaver, White-tailed Deer and Moose. Dens sites are usually found in coniferous forests with easily excavated soil types like sand and close to a permanent water source (1).	Low	No suitable habitat present.
Trees, plants, fungi and lichens							

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		SARA	SARO				
American Ginseng	<i>Panax quinquefolius</i>	END	END	S2	American Ginseng is a perennial plant which grows up to 60 centimetres in height. The leaves typically have five leaflets arranged in a whorl at the end of the leaf stem. The root looks like a gnarly parsnip. The flowers are an inconspicuous green-white in colour, but the berries are bright red and arranged in a cluster. In Ontario, the American Ginseng typically grows in rich, moist, and mature deciduous woods dominated by Sugar Maple, White Ash, and American Basswood. It typically grows in deep, nutrient rich soil over limestone or marble bedrock (1).	Low	No suitable habitat present.
American Hart's-tongue Fern	<i>Asplenium scolopendrium</i>	SC	SC		American Hart's Tongue Fern is a perennial evergreen fern with fronds growing from a short underground stem. Its blades are strap-shaped with a heart-shaped base and pointed tip. The species grows on calcareous rocks on slopes in deciduous forests, preferring deep shade. In Ontario, most occurrences are in maple-beech forests (1).	Low	No suitable habitat present.
Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	SC	SC	S3	The Broad Beech Fern can grow to a height of 50 cm or more and has a creeping, scaly root (2). The fern has large divided leaves called fronds which grow from 25 to 75 cm long and triangular leaf blades. The Broad Beech Fern prefers rich, moist soils in deciduous forests, usually in full shade and often dominated by Maple and Beech trees. In Ontario, it is found in southern Muskoka, along Lake Erie, and in the eastern Lake Ontario - St Lawrence River region (1).	Low	No suitable habitat present.
Butternut	<i>Juglans cinerea</i>	END	END	S2?	The Butternut is a medium sized tree reaching 30 m in height. It has large compound leaves with 11 to 17 leaflets. The fruit is oval, fuzzy and sticky. In Ontario, the Butternut prefers moist, well-drained soil, often along streams, or occasionally well-drained gravel sites. It grows alone or in small groups in deciduous forests (1).	Moderate	The treed areas on Site may provide suitable habitat.
Eastern Prairie Fringed-orchid	<i>Platanthera leucophaea</i>	END	END	S2	The Eastern Prairie Fringed-Orchid has distinctive fringed white flowers with a deep "nectar spur" containing nectar and a flat, fringed "lip" serving as a platform for pollinating insects. It may lie dormant for years before flowering. It can be found in areas of tallgrass prairie or fen throughout the province and in some tamarack swamps of the Bruce Peninsula and Ottawa Area (1).	Low	No suitable habitat present.
Purple Twayblade	<i>Liparis liliifolia</i>	THR	THR	S2	The Purple Twayblade is a small orchid with two broad, shiny leaves at the base of the plant and a single stem from which mauve-purple flowers cluster. It can be found in a variety of habitats including open woodlands, mixed deciduous forests, shrub thickets, deciduous swamps, and coniferous plantations. It requires partial, but can not tolerate full, shade and therefore depends on natural disturbances to keep its habitat relatively open (1).	Low	No suitable habitat present.

References

1. Ministry of Environment, Conservation and parks. (2019). Species at risk in Ontario. Retrieved from <https://www.ontario.ca/page/species-risk-ontario>
2. Government of Canada. (2019). Species at risk public registry. Retrieved from <https://species-registry.canada.ca/index-en.html#/species?ranges=5&sortBy=commonNameSort&sortDirection=asc&pageSize=10>
3. Committee on the Status of Endangered Wildlife in Canada. (2008).
4. Environment Canada. (2018).

APPENDIX: Species at Risk Habitat-Based Screening - Simcoe County

COMMON NAME	SCIENTIFIC NAME	Federal	Provincial	S-RANK	SPECIES DESCRIPTION AND HABITAT REQUIREMENTS	HABITAT-BASED SCREENING (High/Moderate/Low)	RATIONALE
		SARA	SARO				
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