

Environmental Impact Study: Part Lot 45 Concession 1, Township of Selwyn



1447147 Ontario Inc

P/N 3490 | May 8, 2025

Peterborough County

Township of Selwyn

Part Lot 45 Concession 16

SBA Skelton Brumwell
& Associates Inc.

ENGINEERING PLANNING ENVIRONMENTAL CONSULTANTS

Revision History

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Revision 1			
Revision 2			
Revision 3			

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Executive Summary

This Environmental Impact Study (EIS) has been prepared on behalf of 1447147 Ontario Inc in support of an Official Plan Amendment and Zoning By-Law Amendment to enable the future development of the site into low density residential.

Skelton Brumwell & Associates Inc. has been retained to prepare this Environmental Impact Study, which includes a description of the subject lands and the development proposal, analysis of the environmental planning framework, the results of background research and field investigations, and assessment of impacts, proposed mitigation, and an opinion with respect to the proposed natural heritage policy compliance of the proposed development.

The subject lands are located at Part Lot 45, Concession 16 in the Township of Selwyn. The property is covered by deciduous woodlands. The property is approximately 1.09 ha in size.

The proposal involves an Official Plan Amendment and Zoning By-Law Amendment to enable the future development of the site into low density residential.

The proposal, with full implementation of recommended avoidance and mitigation measures, results in an acceptable level of policy consistency and conformity in the context of the requirements set out by the provincial and municipal policies applicable to the development of the subject lands.

In accordance with those requirements, this EIS recommends and concludes as follows:

- Future development situated in the most appropriate area of the subject lands and thereby avoids impacts to natural heritage features and functions.
- Impact mitigation consists of: maximizing tree retention on the property through an ecologically based tree retention plan to be prepared at the time of lot development; avoiding tree removal between April 1st–October 15th unless supervised by an ecologist;
- installing and maintaining silt fencing along the easterly and southerly perimeter of the subject property throughout the construction period.

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Environmental Impact Study

Part Lot 45, Concession 16

1.0 Introduction

This Environmental Impact Study (EIS) has been prepared on behalf of 1447147 Ontario Inc in support of an Official Plan Amendment and Zoning By-Law Amendment to enable the future development of the site into low density residential.

Skelton Brumwell & Associates Inc. has been retained to prepare this Environmental Impact Study, which includes a description of the subject lands and the development proposal, analysis of the environmental planning framework, the results of background research and field investigations, and assessment of impacts, proposed mitigation, and an opinion with respect to the proposed natural heritage policy compliance of the proposed development.

2.0 Proposal

The subject lands are located at Part Lot 45, Concession 16 in the Township of Selwyn. The property is covered by deciduous woodlands. The property is approximately 1.09 ha in size.



The subject lands are situated south of the community of Burleigh Falls in the Township of Selwyn.

Figure 1 Location

The subject lands are surrounded by:

- North** Commercial development, residential dwellings and deciduous woodlands.
- East** Large blocks of woodlands, residential dwellings and Stony Lake.

- South Large blocks woodlands residential dwellings.
- West Large blocks of woodlands and commercial development know as Lovesick Lake Park.

3.0 Policy Context

The Site is governed by the Official Plans of the County of Peterborough and the Township of Selwyn. The Township of Selwyn have included their local policies within the County OP. The property is designated as ‘Recreation Commercial’ on Schedule A1 of the County OP and is zoned ‘Recreational Commercial (RC)’ within the Township ZB. The proposed development consists of an Official Plan Amendment to redesignate the Site to ‘Rural’ and a Zoning By-law Amendment is proposed to rezone the Site to ‘Rural Residential (RR)’.

The entire property is currently vacant of any buildings or structures and is not used for any purpose. It is heavily vegetated (consisting mostly of Northern Red Oak and Sugar Maple tree species). Exposed bedrock is also commonly present throughout the property. According to the Ministry of Natural Resources Natural Heritage (“MNRH”) maps, the entire Site is within the ‘natural heritage system’ and covered by ‘woodlands’

The need for an EIS arises due to the heavily vegetated nature of the property, which are classified as ‘natural heritage system’ and ‘woodlands’ under the MNRH natural heritage mapping data. In addition, unevaluated wetlands are also identified in the properties immediately adjacent to the Site. The Site therefore has the potential to contain natural heritage values and ecological functions valued by the province, County and Township

The environmental impact study requirement is intended to ensure that the natural heritage features and areas have been appropriately identified and that development on lands adjacent to the those features and areas will not have a negative impact.

Compliance with the natural heritage protection policies of the Provincial and municipal documents applicable to the lands requires a determination of whether or not any of the following exist on the site or adjacent lands: significant wetlands; habitat of endangered or threatened species; permanent and intermittent streams and fish habitat; significant woodlands; significant valley lands; significant wildlife habitat; and significant areas of natural and scientific interest.

Provincial Policy is issued under Section 3 of the *Planning Act*, and it contains overall policy directions on matters of provincial interest related to land use planning and development. All Official Plans and amendments thereto must be consistent with the PPS.

An analysis of the proposal has been made against provincial policy of the PPS 2024, given this document is due to have legal effect on 20 October 2024. The PPS 2024 is divided into four key sections: Building Homes, Sustaining Strong and Competitive Communities; Infrastructure and Facilities; Wise Use and Management of Resources; and Protecting Public Health and Safety.

The proposal involves redesignating and rezoning of the subject lands (with no physical development proposed), and is not subject to any natural or manmade hazards. It is therefore considered that the PPS 2024 policies of most relevance to the proposal relate to the suitability of its location for rural residential housing, as well as its potential impacts on existing natural heritage features and values within the locality.

The following sections of this report are intended to address the natural heritage policy requirements of the Province and municipalities to assess consistency and conformity with provincial and municipal requirements.

4.0 Background Information

In order to determine the potential for various key natural heritage features of the development area and adjacent lands, existing sources of information were used (such as official plan and natural heritage resource mapping) in addition to aerial photography and existing data base information

Background research was completed to identify previously identified natural heritage features and functions on/or adjacent to the lot. The documents/sources listed below provided additional resources for this study and are referred to, as applicable, in the analysis set out in this report:

- Ministry of Natural Resources (MNRF) Natural Heritage Information Centre (NHIC);
- Township of Selwyn Official Plan and Comprehensive Zoning By-law;
- Peterborough County Interactive Mapping;
- Ontario Nature Reptile & Amphibian Atlas; and
- Wildlife Values Areas (MNRF)
- iNaturalist and eBird mapping.

5.0 Field Investigations

A series of site visits were conducted. Field investigations occurred only on the subject lands. All other adjacent lands were investigated using remote, roadside and property line observations.

Field investigations were determined after background information was collected as well as the initial site visit to identify potential features of significance.

Survey	Staff Initials	Date	Start Time	Temperature	Cloud Cover	Precipitation	Wind (Beaufort Wind Scale)
Initial Field Survey and Vascular Plant Survey	TMW, MJW	June 10, 2022	1:00pm	21	35%	None	0-1
Breeding Bird Survey 1	TMW, MJW	July 15, 2022	5:30am	26	0%	None	0-1
Breeding Bird Survey 2 and Summer Vascular Plant Survey	TMW, BMW	July 20, 2022	6:00am	24	25%	None	0
Ecological Land Classification and Fall	TMW	October 21, 2021	2:30pm	15	50%	None	2

Vascular Plant Survey							
Raptor Nest and Bat Snag / Roost Survey	TMW	March 17, 2023	12:00pm	3	100%	Light Rain	1-2

5.1 Vegetation and Ecological Land Classification

5.1.1 Methodology

A vascular plant survey was completed using a roving transect through all habitats and areas planned for development. Particular attention was paid during field investigations for Species at Risk listed in the Ontario Endangered Species Act (2007).

Vegetation communities were identified using the Ecological Land Classification (ELC) for Southern Ontario, First Approximation (Lee et al., 1998). Polygons were delineated using aerial photography, field sampled and classified into the most appropriate vegetation type. The polygons were identified based on vegetative cover, soils and landscape features.

The significance of the vegetation communities was assessed based on the Natural Heritage Information Centre's (NHIC) rankings where applicable and no significant vegetation communities were identified.

The iNaturalist data was reviewed relative to documented occurrence of all special concern and provincially rare (S1-S3, SH) plant and animal species.

5.1.2 Data

There were 51 plant species identified within property. All species observed on the property are found to be common to similar habitats found in Ontario. Black Ash (*Fraxinus nigra*) was identified on neighboring lands to the southeast and were included in the species list due to their Endangered species ranking.

A list of vascular plants and their status in Ontario is included is set out below:

Common Name	Latin Name	S_Rank
Alternate-leaved Dogwood	<i>Cornus alternifolia</i>	S5
American Basswood	<i>Tilia americana</i>	S5
American Beech	<i>Fagus grandifolia</i>	S5
American Elm	<i>Ulmus americana</i>	S5
Barren Strawberry	<i>Geum fragarioides</i>	S5
Black Ash	<i>Fraxinus nigra</i>	S4
Black Cherry	<i>Prunus serotina</i>	S5
Blue Cohosh	<i>Caulophyllum thalictroides</i>	S5
Blue Wood Aster	<i>Symphyotrichum cordifolium</i>	S5
Bracken Fern	<i>Pteridium aquilinum</i>	S5
Broad-leaved Sedge	<i>Carex platyphylla</i>	S4S5

Canada Wild-ginger	<i>Asarum canadense</i>	S5
Canadian Yew	<i>Taxus canadensis</i>	S4
Climbing Nightshade	<i>Solanum dulcamara</i>	SNA
Colt's-foot	<i>Tussilago farfara</i>	SNA
Common Dandelion	<i>Taraxacum officinale</i>	SNA
Common Plantain	<i>Plantago major</i>	SNA
Common Red Raspberry	<i>Rubus idaeus</i>	S5
Common Sedge	<i>Carex communis</i>	S5
Cow Vetch	<i>Vicia cracca</i>	SNA
Eastern White Cedar	<i>Thuja occidentalis</i>	S5
Eastern White Pine	<i>Pinus strobus</i>	S5
Grassess	<i>Poaceae</i>	SNA
Green Ash	<i>Fraxinus pennsylvanica</i>	S4
Hairy Solomon's Seal	<i>Polygonatum pubescens</i>	S5
Ironwood	<i>Ostrya virginiana</i>	S5
Jack-in-the-pulpit	<i>Arisaema triphyllum</i>	S5
Large-leaved Aster	<i>Aster macrophyllus</i>	S5
Largetooth Aspen	<i>Populus grandidentata</i>	S5
Maple-leaved Viburnum	<i>Viburnum acerifolium</i>	S5
Marginal Wood Fern	<i>Dryopteris marginalis</i>	S5
Northern Red Oak	<i>Quercus rubra</i>	S5
Prickly Gooseberry	<i>Ribes cynosbati</i>	S5
Red Trillium	<i>Trillium erectum</i>	S5
Rock Polypody	<i>Polypodium virginianum</i>	S5
Sedge Sp.	<i>Carex</i>	SNA
Sensitive Fern	<i>Onoclea sensibilis</i>	S5
Silver Maple	<i>Acer saccharinum</i>	S5
Sugar Maple	<i>Acer saccharum</i>	S5
Tall Buttercup	<i>Ranunculus acris</i>	SNA
Tatarian Honeysuckle	<i>Lonicera tatarica</i>	SNA
Trembling Aspen	<i>Populus tremuloides</i>	S5
Virginia Creeper	<i>Parthenocissus quinquefolia</i>	S4
White Ash	<i>Fraxinus americana</i>	S4
White Birch	<i>Betula papyrifera</i>	S5
White Oak	<i>Quercus alba</i>	S5
White Trillium	<i>Trillium grandiflorum</i>	S5
Wild Asparagus	<i>Asparagus officinalis</i>	SNA
Wild Carrot	<i>Daucus carota</i>	SNA
Wild Grape	<i>Vitis riparia</i>	S5
Wild Sarsaparilla	<i>Aralia nudicaulis</i>	S5

No observations were recorded on the subject or adjacent lands in the reviewed iNaturalist data relative to documented occurrence of all special concern and provincially rare (S1-S3, SH) plant species.

Vegetation communities were identified within the study area using ELC to the Vegetation Type shown in Figure 2.



Figure 2 ELC

FOD5-3 Dry-Fresh Sugar Maple – Oak Deciduous Forest Type

This community is dominated by Northern Red Oak (*Quercus rubra*) and Sugar Maple (*Acer saccharum*). Associates' species include Eastern White Pine (*Pinus strobus*), Largetooth Aspen (*Populus grandidentata*), Black Cherry (*Prunus serotina*), Ironwood (*Ostrya virginiana*) and White Ash (*Fraxinus americana*). Exposed bedrock and small exposed boulders are present on a portion of the subject property. Ground cover consisted Alternate-leaved Dogwood (*Cornus alternifolia*), Bracken Fern (*Pteridium aquilinum*), Tartarian Honeysuckle (*Lonicera tatarica*), Common Wood Sedge (*Carex communis*), Canada Wild Ginger (*Asarum canadense*), Blue Wood Aster (*Symphyotrichum cordifolium*) and Rock Polypody (*Polypodium virginianum*).

5.2 Birds

5.2.1 Methodology

Two (2) breeding bird surveys were conducted on the property during the 2022 field season. To complete these surveys, a mix of point counts and wandering transects were utilized across the property. Point counts were conducted in each area for a period of ten (10) minutes. The wandering transects occurred throughout the property. All surveys took place between 5:00 AM and 10:00 AM as protocol dictates. Incidental observations were also made for birds during field investigations through observations of direct sightings and physical evidence (nesting, cavities).

A stick nest survey was conducted on the subject property during the November 22, 2022, and March 17, 2023 survey. This stick nest survey resulted in no nest observations.

The website eBird's data was also reviewed relative to determination of the potential presence of threatened and endangered species as well as Significant Wildlife Habitat within 200m of the site. The iNaturalist data was also reviewed relative to documented occurrence of bird species.

5.2.2 Data

There were 20 bird species identified within property as follows:

Common Name	Scientific Name	S_Rank
American Crow	<i>Corvus brachyrhynchos</i>	S5B
American Redstart	<i>Setophaga ruticilla</i>	S5B
American Robin	<i>Turdus migratorius</i>	S5B
Black-capped Chickadee	<i>Poecile atricapillus</i>	S5
Blue Jay	<i>Cyanocitta cristata</i>	S5
Brown Creeper	<i>Certhia americana</i>	S5B
Common Raven	<i>Corvus corax</i>	S5
Downy Woodpecker	<i>Picoides pubescens</i>	S5
Eastern Wood-pewee	<i>Contopus virens</i>	S4B
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	S4B
Mourning Dove	<i>Zenaida macroura</i>	S5
Northern Cardinal	<i>Cardinalis cardinalis</i>	S5
Northern Waterthrush	<i>Seiurus noveboracensis</i>	S5B
Pileated Woodpecker	<i>Dryocopus pileatus</i>	S5
Pine Warbler	<i>Dendroica pinus</i>	S5B
Red-eyed Vireo	<i>Vireo olivaceus</i>	S5B
Song Sparrow	<i>Melospiza melodia</i>	S5B
White-breasted Nuthatch	<i>Sitta carolinensis</i>	S5
Winter Wren	<i>Troglodytes troglodytes</i>	S5B
Wood Thrush	<i>Hylocichla mustelina</i>	S4B

All but two species observed on the property are found to be common to similar habitats found in Ontario. No endangered or threatened species were observed on the subject property. Eastern Wood-pewee (*Contopus virens*) and Wood Thrush (*Hylocichla mustelina*) were observed on adjacent

lands to the east and south of the subject property. These species are considered special concern within the province.

Wood Thrush (*Hylocichla mustelina*) breed in large deciduous and mixed woodlands with dense undergrowth.

Eastern Wood-pewee (*Contopus virens*) breed in large deciduous woodlands with little undergrowth.

Based on site conditions and the absence of larger open water features, the following bird habitat is not present on the site or adjacent lands:

- waterfowl stopover or staging areas (terrestrial);
- waterfowl stopover and staging areas (aquatic);
- shorebird migratory stopover area;
- colonial-nesting habitat (bank and cliff);
- colonial nesting habitat (trees/shrubs);
- colonial nesting habitat (ground);
- migratory stopover area;
- waterfowl nesting area;
- bald eagle and osprey nesting/foraging/perching habitat;
- marsh bird breeding habitat;
- open country breeding habitat; and
- shrub/early successional habitat.

The combination of field observations as well as previously documented species therefore indicates the following species of conservation significance on, or with potential habitat on, the site:

(modified chart below to list only the species with on-site observations)

Species	Conservation Significance	Observed Yes/No	NHIC Record Yes/No And Square #	eBird/iNaturalist record within 200m. Yes/No/NA NA applies where habitat does not occur on site or adjacent land
Bald Eagle <i>Haliaeetus leucocephalus</i>	Special Concern, Bald Eagle and Osprey Nesting, Foraging, Perching Habitat	No	No	Yes

Eastern Wood-Pewee <i>Contopus virens</i>	Special Concern	Yes	No	Yes
Olive-sided Flycatcher <i>Contopus cooperi</i>	Special Concern	No	No	Yes
Wood Thrush <i>Hylocichla mustelina</i>	Special Concern	Yes	No	No
Veery <i>Catharus fuscescens</i>	Woodland Area-Sensitive Species	No	No	Yes
Blue-headed Vireo <i>Vireo solitarius</i>	Woodland Area-Sensitive Species	No	No	Yes
Northern Parula <i>Setophaga americana</i>	Woodland Area-Sensitive Species	No	No	Yes
Black-throated Green Warbler <i>Setophaga americana</i>	Woodland Area-Sensitive Species	No	No	Yes
Blackburnian Warbler <i>Setophaga fusca</i>	Woodland Area-Sensitive Species	No	No	Yes
Black-throated Blue Warbler <i>Setophaga caerulescens</i>	Woodland Area-Sensitive Species	No	No	Yes
Winter Wren <i>Troglodytes hiemalis</i>	Woodland Area-Sensitive Species	Yes	No	No
Great Blue Heron <i>Ardea herodias</i>	Colonial Nesting Bird breeding habitat (Tree/Shrubs)	No	No	Yes
Northern Goshawk <i>Accipiter gentilis</i>	Woodland Raptor Nesting Habitat	No	No	Yes
Canada Goose <i>Branta canadensis</i>	Waterfowl Stopover and Staging Area (Aquatic)	No	No	Yes

5.3 Reptiles and Amphibians

5.3.1 Methodology

Incidental observations were made for herptiles (amphibians and reptiles) during field investigations through observations of direct sightings and physical evidence (scats, tracks) and for shelter, feeding and breeding sites (e.g., vernal pools, beneath logs, rocks, etc.).

The iNaturalist data was reviewed relative to documented occurrence of reptile and amphibian species.

5.3.2 Data

Field investigation found no suitable amphibian breeding habitat on the subject property. There is potential habitat on adjacent properties to the east and south but due to Old Burleigh Road being a barrier in between these properties it was determined that amphibian monitoring on neighboring lands was not necessary.

One incidental reptile and amphibian observations (Green Frog - *Lithobates clamitans*) was documented on Old Burleigh Road. This species is considered common within the province.

NHIC squares (17QK2236 & 17QK2237) covering the subject property documented a record of Common Snapping Turtle (*Chelydra serpentina*) and Northern Map Turtle (*Graptemys geographica*). Common Snapping Turtles live can live in almost any aquatic habitat feature including lakes, ponds, river, marshes, and swamps. Northern Map Turtles prefer large lakes and rivers for habitat. No habitat is present within the subject property for either species.

A review of iNaturalist data indicated that no observations of reptile or amphibian species were recorded on the subject or adjacent lands (250m).

5.4 Mammals

5.4.1 Methodology

Incidental observations were made for mammals during field investigations through observations of direct sightings and physical evidence (scats, tracks, shelter, and evidence of feeding).

Two modified bat snag/roost survey were completed on the property during the November 22, 2022, and March 17, 2023 surveys, which documented one poor quality snag on the entire subject property. These surveys involved walking along all borders looking for snags and roosting habitats as well as walking a grid pattern within the woodlands. Although this is a mature woodland the majority of the trees are less than 30cm DBH which do not provide many snag/roosting habitats. Additionally, since this is a relatively young forest it does not have many dead or dying trees.

Wildlife Values Area mapping was reviewed to look for potential deer yarding areas.

The iNaturalist data was reviewed relative to documented occurrence of mammal species.

5.4.2 Data

The only incidental wildlife observation of a mammal on site was an Eastern Chipmunk (*Tamias striatus*). This is believed to be caused due to the surrounding roads and dwellings.

This species is considered to be common within the Province of Ontario.

Wildlife Values Area mapping shows a very small portion of the subject property as White-tailed Deer Yard (Stratum 1). This area is 0.15ha in size and isolated between Old Burleigh Road and Highway

28. This area of the property is also elevated and has large amounts of exposed rock and small drops off features seen below. This area is dominated by Northern Red Oak and Sugar Maple which do not provide winter cover for this species. SBA believes therefore that a small error in mapping was made. Swamp south of the subject property does provide quality over wintering habitat for deer. There is no anticipated negative effects to this feature.

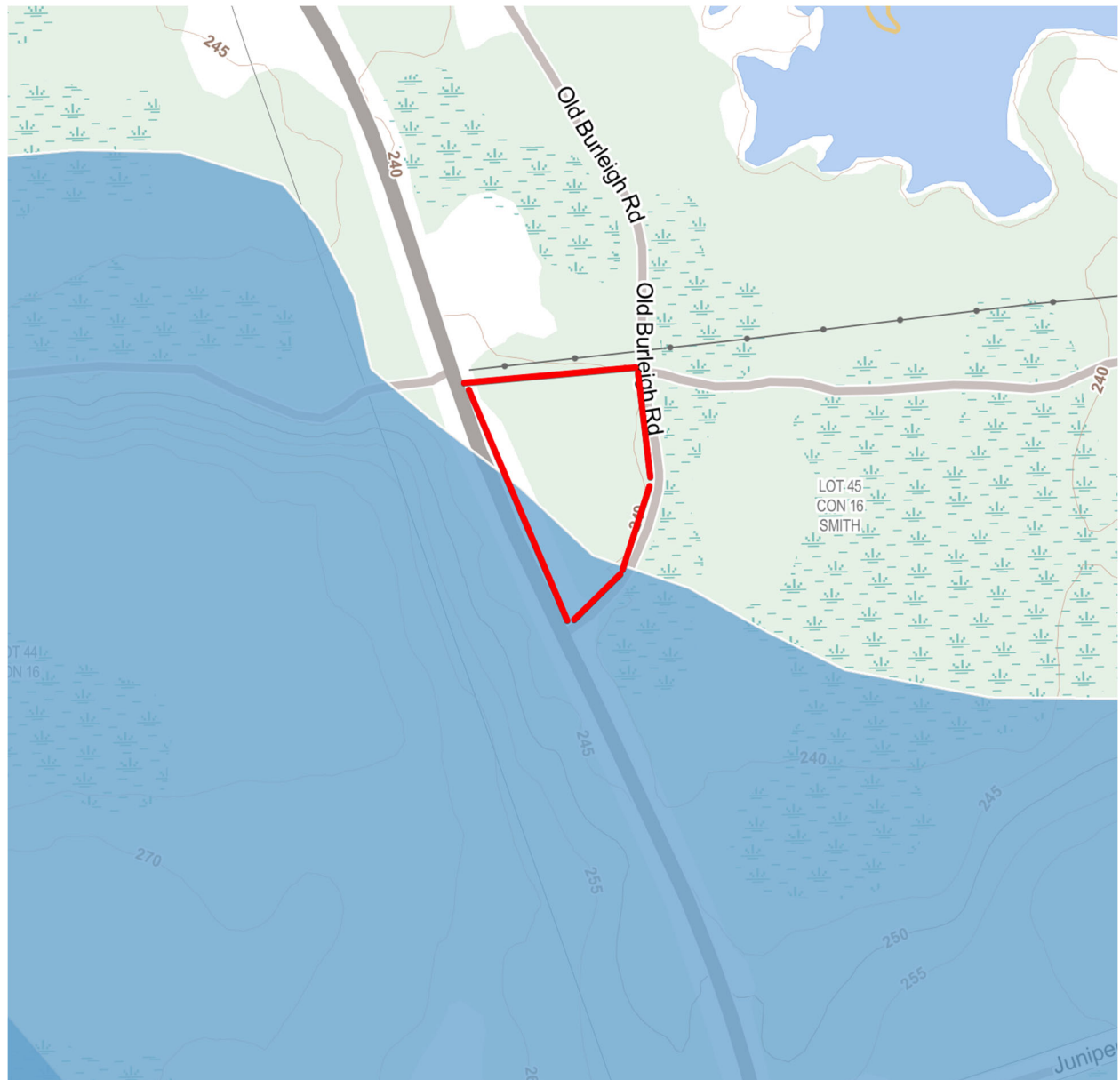


Figure 3 White-tailed Deer Yard (Stratum 1)



Figure 4 Potential Barriers along Highway 28

A review of iNaturalist data indicated that no observations of mammal species were recorded on the subject or adjacent lands (250m).

5.5 Other Terrestrial Fauna

5.5.1 Methodology

Incidental observations were made for other fauna during field investigations through observations of direct sightings and physical evidence (scats, tracks) and for shelter, feeding and breeding evidence.

The iNaturalist data was reviewed relative to documented occurrence of other terrestrial fauna.

5.5.2 Data

No observations of other terrestrial fauna were recorded on the subject or adjacent lands.

A review of iNaturalist data indicated that no observations of other terrestrial fauna were recorded on the subject or adjacent lands.

5.6 Fish

5.6.1 Methodology

The potential presence of fish species as indicated by fish habitat was assessed through a review of mapping and aerial photography and site visits.

No watercourses or wetlands were observed on the property. A wetland feature (swamp) was identified east and south of the subject property across Old Burleigh Road. However, no surface water was observed within the feature during and site investigation.

Stoney Lake is located approximately 160m northeast of the subject property and Lovesick Lake is located approximately 500m northwest. Both lakes have substantial fish populations and are part of the Trent Severn Waterway.

5.6.2 Data

No fish habitat is present on or immediately adjacent to the subject property.

6.0 Natural Heritage Features Identification

6.1 Wetlands

Ministry of Natural Resources and Forestry mapped Unevaluated Wetland covering portions of the property east and south of the subject property along Old Burleigh Road as seen in Figure 3 below.



Figure 5 Wetlands

6.2 Significant Woodlands

The presence of significant woodlands was assessed through a review of planning authority information which identifies significant woodlands.

Official Plan Mapping Schedule A1 Land Use Plan maps the property as Recreation Commercial. This is a very small, isolated portion of forest with development throughout most of the feature. No significant woodlands are present on the subject property.

6.3 Significant Valleylands

The presence of significant valleylands was assessed through a review of planning authority information which potentially identifies significant valleylands.

No significant valleylands are present on or in the vicinity of the subject lands.

6.4 Areas of Natural and Scientific Interest

The presence of Areas of Natural and Scientific Interest (ANSI) was assessed through a review of planning authority information which potentially identifies Areas of Natural and Scientific Interest (ANSI).

No Areas of Natural and Scientific Interest (ANSI) are present on or in the vicinity of the subject lands.

6.5 Species at Risk – Threatened and Endangered

An endangered and threatened species screening was undertaken and potential or confirmed presence of Butternut (*Juglans cinerea*), Black Ash (*Fraxinus nigra*), three bat species at risk (Little Brown Myotis (*Myotis lucifugus*), Northern Myotis (*Myotis septentrionalis*) and Tri-coloured Bat (*Perimyotis subflavus*) were identified by this screening for further assessment as follows.

Additionally, NHIC mapping squares identified a restricted species within the general area. This species is discussed within an external document to ensure no harm comes to this species.

Due to a widespread prevalence in the general area, specific attention was directed to the potential presence of Butternut (*Juglans cinerea*) during all surveys. No Butternut were observed on or immediately adjacent to the property.

The Black Ash (*Fraxinus nigra*), live in a variety of wetland habitats. Specific attention was directed to the potential presence of Black Ash during all surveys. No Black Ash were identified on the subject property. Multiple Black Ash were observed east and south of the subject property within swamp habitat.

Only one poor quality snag was located during the two bat snag / roost surveys on the subject property. This snag was within a large Northern Red Oak and the cavity entrance was approximately 5cm in diameter with an unknown depth. The majority of trees on the subject property have an approximately 30cm diameter at breast height (DBH) which is small when looking for cavities. Additionally, the property is surrounded by roadways on three side and has development on the other, which makes this 1.09 ha property undesirable.

There were no other records of threatened or endangered species on the site or on adjacent lands in the NHIC data base, eBird or iNaturalist.

6.6 Significant Wildlife Habitat

A significant wildlife habitat screening was undertaken. This screening was based on site work as well as the background review of natural heritage information.

This screening, set out in Appendix B indicated the potential and confirmed significant wildlife habitat features and functions on the property. These include bat maternity colonies; bat migratory stopover areas; woodland raptor nesting habitat; special concern and rare wildlife species; amphibian breeding habitat (woodland & wetland) and woodland area sensitive bird breeding habitat.

6.7 Fish Habitat

No fish habitat is present on the subject property or immediately adjacent. With proposed mitigation strategies discussed below the proposed development will have no impact on fish habitat.

6.8 Connectivity and Linkages

Site investigation indicated the no connectivity or linkages within the subject property due to neighboring property uses and roadways.

6.9 Other Natural Heritage Features

No other natural heritage features are present on the subject lands.

7.0 Analysis of Impacts and Recommendations

7.1 Wetlands

7.1.1 Avoidance

Field investigation found no wetland on the subject property. Unevaluated wetlands were observed on neighboring properties but due to roadways and mitigation measures in between there will be no impact to wetland features.

7.1.2 Mitigation

To ensure no harm comes to the Unevaluated Wetlands or either lake silt fencing should be installed prior to any in soil works and stay until all work is completed. This measure will ensure no sediment erosion enters either aquatic habitat.

7.1.3 Buffers and Setbacks

No buffers or setbacks are recommended.

7.1.4 Compensation

Compensation requirements are not applicable.

7.1.5 Net Impacts

No net impacts are anticipated to wetlands on adjacent lands.

7.2 Significant Woodlands

7.2.1 Avoidance

Significant woodlands are not present on the subject property.

7.2.2 Mitigation

Mitigation is not applicable.

7.2.3 Buffers And Setbacks

Buffers and setbacks are not applicable.

7.2.4 Compensation

Compensation is not applicable.

7.2.5 Net Impacts

There are no net impacts anticipated.

7.3 7.3 Significant Valleylands

7.3.1 Avoidance

There are no significant valleylands and avoidance is not applicable.

7.3.2 Mitigation

There are no significant valleylands and mitigation is not applicable.

7.3.3 Buffers And Setbacks

There are no significant valleylands and buffers and setbacks are not applicable.

7.3.4 Compensation

There are no significant valleylands and compensation is not applicable.

7.3.5 Net Impacts

There are no significant valleylands identified on the subject property or within 120 metres. There is therefore no potential to impact significant valleylands.

7.4 Areas Of Natural and Scientific Interest

7.4.1 Avoidance

There are no Areas of Natural and Scientific Interest (ANSI), and avoidance is not applicable.

7.4.2 Mitigation

There are no Areas of Natural and Scientific Interest (ANSI), and mitigation is not applicable.

7.4.3 Buffers and Setbacks

There are no Areas of Natural and Scientific Interest (ANSI), and buffers and setbacks are not applicable.

7.4.4 Compensation

There are no Areas of Natural and Scientific Interest (ANSI), and compensation is not applicable.

7.4.5 Net Impacts

There are no Areas of Natural and Scientific Interest (ANSI) identified on the subject property or within 120 metres. There is therefore no potential to impact Areas of Natural and Scientific Interest (ANSI).

7.5 Species at Risk – Threatened and Endangered

7.5.1 Avoidance

No threatened or endangered species were observed on the subject property. Due the small size of the subject property and surrounding developments and roadways the subject property is not ideal for species at risk.

7.5.2 Mitigation

Species at Risk bat habitat have greater potential to occur outside of the subject property in surrounding large intact woodlands. It is recommended that maximum tree retention on the property occurs. It is also recommended that two standard bat boxes are placed on the subject property after development to ensure possible roosting areas are still present. Additionally, where tree clearing is to occur, it is recommended that clearing adhere to the provisions of the Migratory Birds Convention Act and bat roosting periods, with no cutting between April 1st–October 15th. Where this is not possible, tree removal should occur under supervision of an ecologist to ensure no nesting birds or incidental (i.e. below assessment threshold) bat roosting areas are disturbed.

7.5.3 Buffers and Setbacks

Buffer and setbacks are not applicable.

7.5.4 Compensation

Compensation is not applicable.

7.5.5 Net Impacts

The absence of threatened and endangered species and their habitat establishes compliance with the Endangered Species Act.

7.6 Significant Wildlife Habitat

7.6.1 Avoidance

Potential significant wildlife habitat features are associated with the wooded areas of the subject property. This screening, set out in Appendix B indicated the potential and confirmed significant wildlife habitat features and functions on the portions of the property. These include: bat maternity colonies; bat migratory stopover areas; woodland raptor nesting habitat; special concern and rare wildlife species, amphibian breeding habitat (wetland & woodland) and woodland area sensitive bird breeding habitat.

As previously indicated, bat maternity habitat is also most likely to be situated outside of the subject property. Only one poor quality snag tree was discovered on the entire subject property. Impact is further avoided by avoiding tree removal during the roosting period. The intact woodlands surrounding the subject property are large enough and protected which will assist in avoiding impacts to potential migratory stopover areas.

Specific attention during all survey was made to the possibility of raptor nesting habitat. No stick nests were discovered on or immediately adjacent to the subject property during any ecological site visit. Potential for woodland raptor nesting habitat certainly exists in areas outside of the subject property within intact woodlands and unevaluated wetlands. Additionally the property is too small to represent significant wildlife habitat for raptor nesting habitat. The proposed developments will have no impact on possible adjacent woodland raptor nesting habitat.

Wood Thrush (*Hylocichla mustelina*) and Eastern Wood-pewee (*Contopus virens*) live in very similar habitats and are often found living alongside one another. These species breed in large deciduous and mixed woodlands. Both these bird species were observed on neighboring properties to the east and south. The woodlands on the subject property are too small to represent critical habitat for these species. The property is approximately 1.09ha in size. There is potential for these species to use the property for feeding locations although evidence shows these species tend to prefer large intact woodlands.

Amphibian breeding habitat (wetland & woodland) is possibly present on adjacent lands to the east and south within unevaluated wetlands. No habitat is present on the subject property for this significant wildlife habitat feature. The proposed development will have no effect on this potential feature on adjacent lands.

Woodland area sensitive bird breeding habitat is possible on adjacent lands to the east, south and west of the subject property. The website eBird documented multiple bird species that represent this wildlife feature to the east of the subject property. The subject property is too small to represent significant wildlife habitat. Although there is a possibility bird species are using this woodland there is sufficient intact woodlands surrounding the subject property which can be used as habitat.

NHIC squares 17QK2236 and 17QK2237 documented a record of Common Snapping Turtle (*Chelydra serpentina*), Northern Map Turtle (*Graptemys's geographica*), Colonial Waterbird Nesting Area and Mixed Wader Nesting Colony.

Common Snapping Turtles can live in almost any aquatic habitat feature including lakes, ponds, river, marshes, and swamps. There are no aquatic features on the subject property and therefore no habitat for this species.

Northern Map Turtles live in large or medium sized rivers and lakes. There are no aquatic features on the subject property and therefore no habitat for this species.

Colonial Waterbird Nesting Areas and Mixed Wader Nesting Colonies were documented with NHIC squares that cover the subject property and surrounding lands. The subject property has no aquatic features and therefore no Colonial Waterbird Nesting Areas and Mixed Wader Nesting Colony's.

The website Ebird documented records of Bald Eagle (*Haliaeetus leucocephalus*) and Olive-sided Flycatcher (*Contopus cooperi*) east of the subject property on adjacent lands. Both species are considered special concern within the province.

Bald Eagle (*Haliaeetus leucocephalus*) can live in a wide variety of habitats and are known to catch fish as a main food source but will also hunt and scavenge. No nests were observed on or near the subject property. The subject property does not provide quality habitat for this bird species due to the distance from the water, thick canopy cover and neighboring developments.

Olive-sided Flycatcher (*Contopus cooperi*) live along forest openings and along forest edges. This species is often associated with wetlands and waterbodies as these features have forest edges as well as nesting habitat within coniferous trees that border them. This species can also be found in logged or burned areas as well. This species was not observed during any ecological site visit on the subject property. It is possible this species is using the property as foraging habitat, but surrounding lands will be sufficient to ensure no impacts come to this species.

The fact that the site is approximately 1.09 ha in size excludes it from most significant wildlife habitat criteria. Additionally, the subject property has no aquatic features and is surrounded by development and roadways. The tree cutting provisions laid out will be sufficient to avoid impact to potentially present significant wildlife habitat features.

7.6.2 Mitigation

Mitigation proposed around tree cutting provisions will mitigate impacts on significant wildlife habitat features.

7.6.3 Buffers and Setbacks

No additional buffers or setbacks are required.

7.6.4 Compensation

No compensation is required.

7.6.5 Net Impacts

No impact on significant wildlife habitat features or functions is anticipated.

7.7 Fish Habitat

7.7.1 Avoidance

No fish habitat was observed within or immediately adjacent to the subject property. However Unevaluated Wetlands, Stony Lake and Lovesick Lake are located close to the proposed developments.

7.7.2 Mitigation

To ensure no harm comes to the Unevaluated Wetlands or either lake silt fencing should be installed prior to any in soil works and stay until all work is completed. This measure will ensure no sediment erosion enters either aquatic habitat.

7.7.3 Buffers and Setbacks

Due to surround property uses and roadways no buffers or setbacks are required.

7.7.4 Compensation

Compensation is not applicable.

7.7.5 Net Impacts

The proposed development is not anticipated to impact fish habitat.

7.8 Connectivity and Linkages

7.8.1 Avoidance

No connectivity or linkages were observed on or immediately adjacent to the subject property.

7.8.2 Mitigation

No mitigation is not required.

7.8.3 Buffers and Setbacks

No additional buffers or setbacks are required.

7.8.4 Compensation

Compensation is not applicable or required.

7.8.5 Net Impacts

There are no anticipated net impacts on connectivity or linkages.

7.9 Other Natural Heritage Features

7.9.1 Avoidance

No other natural heritage features have been identified.

7.9.2 Mitigation

No other natural heritage features have been identified, and mitigation is not required.

7.9.3 Buffers and Setbacks

No other natural heritage features have been identified, and additional buffers and setbacks are not required.

7.9.4 Compensation

Compensation is not applicable or required.

7.9.5 Net Impacts

No other natural heritage features have been identified, and no net impacts are therefore anticipated.

8.0 Conclusion - Net Impact Assessment and Policy Compliance

The proposal is in support of an Official Plan Amendment and Zoning By-Law Amendment to enable the future development of the site into low density residential.

The proposal, with full implementation of recommended avoidance and mitigation measures, results in an acceptable level of policy consistency and conformity in the context of the requirements set out by the provincial and municipal policies applicable to the development of the subject lands.

In accordance with those requirements, this EIS recommends and concludes as follows:

- Future development situated in the most appropriate area of the subject lands and thereby avoids impacts to natural heritage features and functions.
- Impact mitigation consists of: maximizing tree retention on the property through an ecologically based tree retention plan to be prepared at the time of lot development; avoiding tree removal between April 1st–October 15th unless supervised by an ecologist;
- installing and maintaining silt fencing along the easterly and southerly perimeter of the subject property throughout the construction period.

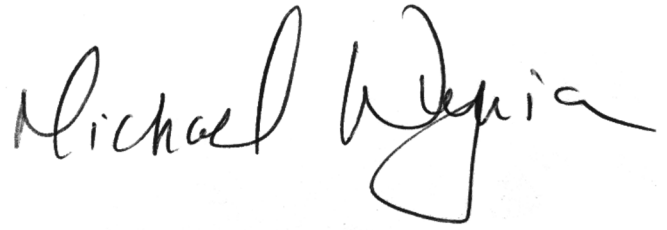
All of which is respectfully submitted,

SKELTON, BRUMWELL & ASSOCIATES INC.

Per:

A handwritten signature in blue ink, reading "Taylor Wynia". The signature is fluid and cursive, with the first name "Taylor" and last name "Wynia" clearly distinguishable.

Taylor Wynia Hon BSc
Ecologist/Herpetologist

A handwritten signature in black ink, reading "Michael Wynia". The signature is fluid and cursive, with the first name "Michael" and last name "Wynia" clearly distinguishable.

Michael Wynia MCIP, RPP
Partner, Senior Ecologist and Planner

Appendix A

Species at Risk Assessment

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
Acadian Flycatcher	<i>Empidonax virescens</i>	Endangered	Mostly in large deciduous forests and forest ravines, often near wetlands.	No	No observations in area/habitat not present.
American White Pelican	<i>Pelecanus erythrorhynchos</i>	Threatened	Islands and shorelines of large waterbodies with little tree cover.	No	No observations in area/habitat not present.
Bank Swallow	<i>Riparia riparia</i>	Threatened	Stable banks made of silt or sand.	No	No observations in area/habitat not present.
Barn Owl	<i>Tyto alba</i>	Endangered	Open grasslands and orchards.	No	No observations in area/habitat not present.
Barn Swallow	<i>Hirundo rustica</i>	Threatened	Usually found near human development, like unpainted ruff wood to nest.	No	No observations in area/habitat not present.
Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Hay fields and long grass meadows.	No	No observations in area/habitat not present.
Cerulean Warbler	<i>Setophaga cerulea</i>	Threatened	Mature deciduous forests with large, tall trees and open understory.	No	No observations in area/habitat not present.
Chimney Swift	<i>Chaetura pelagica</i>	Threatened	Most often found in urban settlements, often close to water for feeding.	No	No observations in area/habitat not present.
Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	Open meadow or field habitats.	No	No observations in area/habitat not present.
Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	Threatened	Forest openings and rock outcropping.	No	No observations in area/habitat not present.
Golden Eagle	<i>Aquila chrysaetos</i>	Endangered	Large undisturbed forests near open areas.	No	No observations in area/habitat not present.

Henslow's Sparrow	<i>Ammodramus henslowii</i>	Endangered	Tall grass fields and flowering plants.	No	No observations in area/habitat not present.
Hudsonian Godwit	<i>Limosa haemastica</i>	Threatened	During migration mud flats, flooded fields, costal wetlands	No	No observations in area/habitat not present.
King Rail	<i>Rallus elegans</i>	Endangered	Densly vegetated freshwater marshs.	No	No observations in area/habitat not present.
Kirtlands Warbler	<i>Setophaga kirtlandii</i>	Endangered	Large stands of young jack pine stands.	No	No observations in area/habitat not present.
Least Bittern	<i>Ixobrychus exilis</i>	Threatened	Primarily cattail marshes.	No	No observations in area/habitat not present.
Loggerhead Shrike	<i>Lanius ludovicianus</i>	Endangered	Pasture and grasslands with Hawthorn.	No	No observations in area/habitat not present.
Louisiana Waterthrush	<i>Parkesia motacilla</i>	Threatened	Deciduous forests with steep ravines and fast flowing stream/ occasionally woodland swamps.	No	No observations in area/habitat not present.
Northern Bobwhite	<i>Colinus virginianus</i>	Endangered	Grasslands/Savannahs/Farm Fields.	No	No observations in area/habitat not present.
Piping Plover	<i>Charadrius melodus</i>	Endangered	Along sandy and gravel beaches above high-water levels.	No	No observations in area/habitat not present.
Prothonotary Warbler	<i>Protonotaria citrea</i>	Endangered	Carolinian Deciduous flooded or swamp forests.	No	No observations in area/habitat not present.
Red Knot (Rufa Subspecies)	<i>Calidris canutus rufa</i>	Endangered	Beaches/Mudflats/Coastal Lagoons.	No	No observations in area/habitat not present.
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	Endangered	Open woodlands and edges of Oak and Beech forests	No	No observations in area/habitat not present.
Yellow-breasted Chat	<i>Icteria virens</i>	Endangered	Thickets and scrub, overgrown clearings.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
Allegheny Mountain Dusky Salamander	<i>Desmognathus ochrophaeus</i>	Endangered	Small slow flowing rocky streams.	No	No observations in area/habitat not present.
Northern Dusky Salamander	<i>Desmognathus fuscus</i>	Endangered	Small slow flowing rocky streams.	No	No observations in area/habitat not present.
Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	Endangered	Mole salamander, lives underground but best chance to see it is during breeding season in vernal pools, usually lives near wetland.	No	No observations in area/habitat not present.
Small-mouthed Salamander	<i>Ambystoma texanum</i>	Endangered	Mole Salamander, lives under ground and can be seen just under the leaf litter. Usually lives near wetland.	No	No observations in area/habitat not present.
Folwers Toad	<i>Anaxyrus fowleri</i>	Endangered	Sandy Shorelines.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
Five Lined Skink (Carolinian population)	<i>Plestiodon fasciatus</i>	Endangered	Found within open forest habitats and stabilized sand dunes.	No	No observations in area/habitat not present.
Blue Racer	<i>Coluber constrictor foxii</i>	Endangered	Typically found in open grassland habitats but can be found in open forest and edge habitats.	No	No observations in area/habitat not present.
Bulter's Gartersnake	<i>Thamnophis butleri</i>	Endangered	Found in open grassy and meadow habitats, often found under cover.	No	No observations in area/habitat not present.
Eastern Foxsnake (Carolinian population)	<i>Pantherophis gloydi</i>	Endangered	Often found near human development, most found in edge habitats.	No	No observations in area/habitat not present.
Eastern Foxsnake (Georgian Bay population)	<i>Pantherophis gloydi</i>	Threatened	Found near water in edge or open habitats/require rotting logs for nesting's.	No	No observations in area/habitat not present.
Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	Threatened	Edge habitats near water but can be found within primarily deciduous forests.	No	No observations in area/habitat not present.
Queensnake	<i>Regina septemvittata</i>	Endangered	Within rivers with rocky shorelines.	No	No observations in area/habitat not present.
Gray Ratsnake (Carolinian population)	<i>Pantherophis spiloides</i>	Endangered	Arboreal species found within deciduous forest and edge habitats.	No	No observations in area/habitat not present.
Gray Ratsnake (Frontenac Axis population)	<i>Pantherophis spiloides</i>	Threatened	Arboreal species found within deciduous forest and edge habitats.	No	No observations in area/habitat not present.

Eastern Massasauga Rattlesnake (Carolinian population)	<i>Sistrurus catenatus</i>	Endangered	Within 50km from water usually closer, most often found in edge habitats.	No	No observations in area/habitat not present.
Eastern Massasauga Rattlesnake (Great Lakes population)	<i>Sistrurus catenatus</i>	Threatened	Within 50km from water usually closer, most often found in edge habitats.	No	No observations in area/habitat not present.
Spiny Softshell	<i>Apalone spinifera</i>	Endangered	Found in large rivers with sandy bottoms.	No	No observations in area/habitat not present.
Spotted Turtle	<i>Clemmys guttata</i>	Endangered	Small shallow wetlands, bogs and marshes sometimes ponds.	No	No observations in area/habitat not present.
Wood Turtle	<i>Glyptemys insculpta</i>	Endangered	Rivers that are not too fast and their tributaries.	No	No observations in area/habitat not present.
Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	Ideal habitat is wetlands and ponds with clean water and mucky bottoms but can be found within lakes and degraded habitat.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
American Eel	<i>Anguilla rostrata</i>	Endangered	Most diverse habitat characteristics of any Ontario fish.	No	No observations in area/habitat not present.
Black Redhorse	<i>Moxostoma duquesnei</i>	Threatened	Sandy gravel bottoms of pools and riffles.	No	No observations in area/habitat not present.
Cutlip Minnow	<i>Exoglossum maxillingua</i>	Threatened	Warm slow-moving rivers with rocky and gravel bottoms.	No	No observations in area/habitat not present.
Eastern Sand Darter	<i>Ammocrypta pellucida</i>	Endangered	Shallow habitats in lakes streams and rivers with clean sandy bottoms.	No	No observations in area/habitat not present.
Lake Chubsucker	<i>Erimyzon sucetta</i>	Threatened	Lakes and marshes with clear warm water and plenty of aquatic vegetation.	No	No observations in area/habitat not present.
Lake Sturgeon (Great Lakes - Upper St Lawrence population)	<i>Acipenser fulvescens</i>	Endangered	Lakes or Rivers with soft bottoms of mud/sand or gravel.	No	No observations in area/habitat not present.
Lake Whitefish (Opeongo)	<i>Coregonus clupeaformis</i>	Threatened	Lake Opeongo, Algonquin Park	No	No observations in area/habitat not present.
Northern Madtom	<i>Noturus stigmosus</i>	Endangered	Large creeks and rivers with moderate to swift current with sand, gravel and mud bottoms.	No	No observations in area/habitat not present.
Pugnose Minnow	<i>Opsopoeodus emiliae</i>	Threatened	Coastal wetlands, clear warm water with abundant vegetation.	No	No observations in area/habitat not present.
Pugnose Shiner	<i>Notropis anogenus</i>	Threatened	Lakes and clam water with clear water and sandy or muddy bottoms.	No	No observations in area/habitat not present.

Redsided Dace	<i>Clinostomus elongatus</i>	Endangered	Pools and slow-moving small streams with gravel bottoms.	No	No observations in area/habitat not present.
River Darter	<i>Percina shumardi</i>	Endangered	Medium to large rivers with gravel and cobble.	No	No observations in area/habitat not present.
Shortjaw Cisco	<i>Coregonus zenithicus</i>	Threatened	Large lakes 55-180 metres of water.	No	No observations in area/habitat not present.
Shortnose Cisco	<i>Coregonus reighardi</i>	Endangered	Large Lakes 22-144 metres of water.	No	No observations in area/habitat not present.
Silver Chub	<i>Macrhybopsis storeriana</i>	Threatened	Usually in 12 metres of water.	No	No observations in area/habitat not present.
Silver Shiner	<i>Notropis photogenis</i>	Threatened	Medium to large streams with swift currents with gravel or boulder bottoms.	No	No observations in area/habitat not present.
Spotted Gar	<i>Lepisosteus oculatus</i>	Endangered	Coastal wetlands with abundant vegetation.	No	No observations in area/habitat not present.
Warmouth	<i>Lepomis gulosus</i>	Endangered	Silt free marshes with mucky bottoms and abundant vegetation.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
Algonquin Wolf	<i>Canis sp.</i>	Threatened	Deciduous or mixed forests, dens in coniferous forests near water.	No	No observations in area/habitat not present.
American Badger (Northwestern Ontario)	<i>Taxidea taxus</i>	Endangered	Tall grass prairie/ sand barrens and farmlands.	No	No observations in area/habitat not present.
American Badger (Southwestern Ontario)	<i>Taxidea taxus</i>	Endangered	Tall grass prairie/ sand barrens and farmlands.	No	No observations in area/habitat not present.
Caribou (Boreal)	<i>Rangifer tarandus</i>	Threatened	Dense Boreal Forests.	No	No observations in area/habitat not present.
Eastern Small-footed Myotis	<i>Myotis leibii</i>	Endangered	Under rocks/buildings/ caves.	No	No observations in area/habitat not present.
Gray Fox	<i>Urocyon cinereoargenteus</i>	Threatened	Deciduous forests and marshes.	No	No observations in area/habitat not present.
Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Deciduous forests with snags and urban areas.	Possible	Possible habitat on subject property.
Mountain Lion	<i>Puma concolor</i>	Endangered	Large forests with abundant white-tailed deer populations.	No	No observations in area/habitat not present.
Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Forests.	Possible	Possible habitat on subject property.
Tri-coloured Bat	<i>Perimyotis subflavus</i>	Endangered	Deciduous Forest/ Oaks and Maples Primarily.	Possible	Possible habitat on subject property.
Wolverine	<i>Gulo gulo</i>	Threatened	Boreal Forests.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
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Broad-Banded Forestsnail	<i>Allogona profunda</i>	Endangered	Forests with sandy soils.	No	No observations in area/habitat not present.
Carolina Mantleslug	<i>Philomycus carolinianus</i>	Threatened	Old Growth Forests with decayed wood.	No	No observations in area/habitat not present.
Eastern Banded Tigersnail	<i>Anguispira kochi kochi</i>	Endangered	Deciduous forests.	No	No observations in area/habitat not present.
Fawnsfoot	<i>Truncilla donaciformis</i>	Endangered	Shallow waters or slow-moving medium to large rivers.	No	No observations in area/habitat not present.
Hickorynut	<i>Obovaria olivaria</i>	Endangered	Sandy beds in large wide deep rivers with moderate to strong currents.	No	No observations in area/habitat not present.
Kidneyshell	<i>Ptychobranchus fasciolaris</i>	Endangered	Small to medium shallow clear fast-moving streams with gravel and sand bottoms.	No	No observations in area/habitat not present.
Lilliput	<i>Toxolasma parvum</i>	Threatened	Variety of soft river bottoms.	No	No observations in area/habitat not present.
Northern Riffleshell	<i>Epioblasma torulosa rangiana</i>	Endangered	Riffles in streams with rocky or sand or gravel bottoms.	No	No observations in area/habitat not present.
Proud Globelet	<i>Patera pennsylvanica</i>	Endangered	Sandy Oak Forests.	No	No observations in area/habitat not present.
Rayed Bean	<i>Villosa fabalis</i>	Endangered	Sand or gravel in shallow clear headwaters and riffles of small tributaries.	No	No observations in area/habitat not present.
Round Hickorynut	<i>Obovaria subrotunda</i>	Endangered	Moderate to fast flowing rivers with clay/sand/gravel bottoms.	No	No observations in area/habitat not present.
Round Pigtoe	<i>Pleurobema sintoxia</i>	Endangered	Deep rivers with sandy/rocky or mud bottoms.	No	No observations in area/habitat not present.
Shagreen	<i>Inflectarius inflectus</i>	Endangered	Pelee Island	No	No observations in area/habitat not present.
Salamander Mussel	<i>Simpsonaias ambigua</i>	Endangered	Swift current rivers with soft bottoms.	No	No observations in area/habitat not present.

Snuffbox	<i>Epioblasma triquetra</i>	Endangered	Clean, Clear swift flowing streams with rocky/gravel or sand bottoms.	No	No observations in area/habitat not present.
Threehorn Wartyback	<i>Obliquaria reflexa</i>	Threatened	Large rivers with moderate current and stable gravel, sand or mud bottoms.	No	No observations in area/habitat not present.
Toothed Globe	<i>Mesodon zaletus</i>	Endangered	Essex and Middlesex County	No	No observations in area/habitat not present.
Wavy-rayed Lampmussel	<i>Lampsilis fasciola</i>	Threatened	Small to medium sized rivers with moderate currents in riffles with sand or rocky or gravel bottoms.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
American Chesnut	<i>Castanea dentata</i>	Endangered	Carolinian habitat, dryer upland deciduous forests with sandy, acidic to neutral soils.	No	No observations in area/habitat not present.
American Columbo	<i>Frasera caroliniensis</i>	Endangered	Dry upland open deciduous forests.	No	No observations in area/habitat not present.
American Ginseng	<i>Panax quinquefolius</i>	Endangered	Along ridges and ravines of deciduous or mixed forests/ Micro habitats.	Possible	No observations on site.
American Water-Willow	<i>Justicia americana</i>	Threatened	Grows along the shores and in the water with wave action.	No	No observations in area/habitat not present.
Bent Spike Rush	<i>Eleocharis geniculata</i>	Endangered	Wet, sandy, muddy soil in open flats.	No	No observations in area/habitat not present.
Birds-foot Violet	<i>Viola pedata</i>	Endangered	Black Oak Savanna.	No	No observations in area/habitat not present.
Black Ash	<i>Fraxinus nigra</i>	Endangered	Wetlands, floodplains and fens	Yes	Present on adjacent lands.
Blue Ash	<i>Fraxinus quadrangulata</i>	Threatened	Deciduous floodplain forests and along sandy beaches and limestone outcroppings.	No	No observations in area/habitat not present.
Bluehearts	<i>Buchnera americana</i>	Endangered	Wet meadow communities between sand dunes/tall grass prairies.	No	No observations in area/habitat not present.
Blunt-lobed Woodsia	<i>Woodsia obtusa</i>	Endangered	Steep chalky rock faces in deciduous forests.	No	No observations in area/habitat not present.
Branched Bartonias	<i>Bartonia paniculata</i> ssp. <i>paniculata</i>	Threatened	Sphagnum bog and fen wetlands dominated by sedges.	No	No observations in area/habitat not present.

Butternut	<i>Juglans cinerea</i>	Endangered	Deciduous forests, prefers moist well drained soil often found along streams with lot of sun, can grow in gravel dominated soils.	Possible	No observations on site.
Cherry Birch	<i>Betula lenta</i>	Endangered	Moist well drained clay loam soil over limestone bedrock with or deciduous trees.	No	No observations in area/habitat not present.
Colicroot	<i>Aletris farinosa</i>	Endangered	Open sunny moist habitats with sandy or mucky soil such as prairie or old fields.	No	No observations in area/habitat not present.
Cucumber Tree	<i>Magnolia acuminata</i>	Endangered	Upland moist deciduous or mixed forest habitats, well drained soils.	No	No observations in area/habitat not present.
Downy Yellow False Foxglove	<i>Aureolaria virginica</i>	Endangered	Waterloo, Halton, Hamilton, Norfolk, Brant	No	No observations in area/habitat not present.
Deerberry	<i>Vaccinium stamineum</i>	Threatened	Dry open woods on sandy well drained soils growing under oaks, pitch pine or white pine near large water bodies.	No	No observations in area/habitat not present.
Dense Blazing Star	<i>Liatris spicata</i>	Threatened	Dense moist prairies, grasslands, wet areas between dunes and abandoned fields.	No	No observations in area/habitat not present.
Drooping Trillium	<i>Trillium flexipes</i>	Endangered	Damp sandy soil in mature deciduous forests close to a river.	No	No observations in area/habitat not present.
Dwarf Hackberry	<i>Celtis tenuifolia</i>	Threatened	Several different habitats, dry sandy areas near lakeshores	No	No observations in area/habitat not present.

			inland dunes, ridge tops and limestone alvars.		
Eastern Flowing Dogwood	<i>Cornus florida</i>	Endangered	Mid age to mature deciduous or mixed forests in flood plains, ravines or on slopes or bluffs.	No	No observations in area/habitat not present.
Eastern Prairie Fringed- Orchid	<i>Platanthera leucophaea</i>	Endangered	Wetlands, fens, swamps, and tall grass prairie.	No	No observations in area/habitat not present.
Eastern Prickly Pear Cactus	<i>Opuntia humifusa</i>	Endangered	Dry sandy areas in full sun.	No	No observations in area/habitat not present.
Engelmanns Quillwort	<i>Isoetes engelmannii</i>	Endangered	Aquatic plant, shallow water in lakes and rivers.	No	No observations in area/habitat not present.
False Hop Sedge	<i>Carex lupuliformis</i>	Endangered	Riverine swamps and marshes around temporary forest ponds.	No	No observations in area/habitat not present.
Flase Rue- anemone	<i>Enemion biterdatum</i>	Threatened	Deciduous forests and thickets with rich, moist soil, often in valleys, floodplains and ravine bottoms.	No	No observations in area/habitat not present.
Fern-leaved Yellow False Foxglove	<i>Aureolaria pedicularia</i>	Threatened	Savanna and open woodlands , Hamilton, Halton, Lambton, Norfolk, Niagara	No	No observations in area/habitat not present.
Few-flowered Club Rush	<i>Trichophorum planifolium</i>	Endangered	Steep slopes of oak forests.	No	No observations in area/habitat not present.
Forked Three- awned Grass	<i>Aristida basiramea</i>	Endangered	Open bare ground sparsely covered grassy areas/ Disturbed areas.	No	No observations in area/habitat not present.
Four-leaved Milkweed	<i>Asclepias quadrifolia</i>	Endangered	Dry woodlands dominated by tallgrass prairie herbs, bur oak and shagbark hickory/ woodland alvar dominated by red	No	No observations in area/habitat not present.

			cedar and pastureland.		
Gattinger's Agalinus	<i>Agalinis gattingeri</i>	Endangered	Dry open tall grass prairie and alvars.	No	No observations in area/habitat not present.
Gillman's Goldenrod	<i>Solidago gillmanii</i>	Endangered	Sand Dunes of Lake Huron	No	No observations in area/habitat not present.
Hairy Valerian	<i>Valeriana edulis ssp. Ciliata</i>	Threatened	Wet Prairies and Fens, Brant and Huron County	No	No observations in area/habitat not present.
Heart-leaved Plantain	<i>Plantago cordata</i>	Endangered	Undisturbed wet woods, near slow moving streams and have limestone base/Strongly associated with maple trees.	No	No observations in area/habitat not present.
Hill's Thistle	<i>Cirsium hillii</i>	Threatened	Open alvar grasslands, limestone bedrock, prairie or sand dunes also used.	No	No observations in area/habitat not present.
Hoary Mountain-mint	<i>Pycnanthemum incanum</i>	Endangered	Dry oak woodland habitat on steep warm slopes.	No	No observations in area/habitat not present.
Horsetail Spike-rush	<i>Eleocharis equisetoides</i>	Endangered	Shallow water along the edges of ponds.	No	No observations in area/habitat not present.
Houghton's Goldenrod	<i>Solidago houghtonii</i>	Threatened	Open alvars very little soil and bedrock.	No	No observations in area/habitat not present.
Juniper Sedge	<i>Carex juniperorum</i>	Endangered	Open alvars, and oak savannah.	No	No observations in area/habitat not present.
Kentucky Coffee-tree	<i>Gymnocladus dioicus</i>	Threatened	Moist rich soil, floodplains, shade intolerant.	No	No observations in area/habitat not present.
Lakeside Daisy	<i>Tetraneuris herbacea</i>	Threatened	Open Grassland and pavement alvars.	No	No observations in area/habitat not present.
Large Whorled Pogonia	<i>Isotria verticillata</i>	Endangered	Deciduous or mixed forests with sandy soil and thick leaf litter.	No	No observations in area/habitat not present.

Lowland Toothcup	<i>Rotala ramosior</i>	Endangered	Along lakes on thin sandy muddy or gravelly soils on Precambrian bedrock.	No	No observations in area/habitat not present.
Nodding Pogonia	<i>Triphora trianthophora</i>	Endangered	Rich moist deciduous forests, well developed tree canopy with deep leaf litter.	No	No observations in area/habitat not present.
Ogden's Pondweed	<i>Potamogeton ogdenii</i>	Endangered	Clear slow-moving streams, beaver ponds and lakes.	No	No observations in area/habitat not present.
Pale Showy Goldenrod	<i>Solidago pallida</i>	Threatened	Prairie grassland – northwestern Ontario	No	No observations in area/habitat not present.
Pink Milkwort	<i>Polygala incarnata</i>	Endangered	Open Moist to dry sandy prairie habitats.	No	No observations in area/habitat not present.
Pitcher's Thistle	<i>Cirsium pitcheri</i>	Threatened	Windblown sand dunes ridges, requires sand movement in these open bare areas.	No	No observations in area/habitat not present.
Purple Twayblade	<i>Liparis liliifolia</i>	Threatened	Wide variety of habitat, open oak woodland, savannah, shrub thicket, shrub alvar, deciduous swamp, coniferous plantations.	No	No observations in area/habitat not present.
Red Mulberry	<i>Morus rubra</i>	Endangered	Forested valleys and floodplains.	No	No observations in area/habitat not present.
Round-leaved Greenbrier	<i>Smilax rotundifolia</i>	Threatened	open wet sandy soil Carolinian forests.	No	No observations in area/habitat not present.
Scarlet Ammannia	<i>Ammannia robusta</i>	Endangered	Mudflats, sandy beaches, edges of wetlands and ponds that are seasonally flooded.	No	No observations in area/habitat not present.
Showy Goldenrod (Boreal)	<i>Solidago speciosa</i>	Threatened	Prairie Grasslands on south facing slope bordered with pine.	No	No observations in area/habitat not present.

Skinner's Agalinis	<i>Agalinis skinneriana</i>	Endangered	Tallgrass prairie habitats.	No	No observations in area/habitat not present.
Slender Bush-clover	<i>Lespedeza virginica</i>	Endangered	Dry sandy soil in tallgrass prairie habitats.	No	No observations in area/habitat not present.
Small White Lady's Slipper	<i>Cypripedium candidum</i>	Endangered	Moist prairie savannahs and limestone fens.	No	No observations in area/habitat not present.
Small Whorled Pogonia	<i>Isotria medeoloides</i>	Endangered	Moist mixed forests with acidic soils and decaying leaves.	No	No observations in area/habitat not present.
Small-flowered Lipocarpa	<i>Lipocarpa micrantha</i>	Threatened	Sandy beaches seasonally flooded and protected from waves.	No	No observations in area/habitat not present.
Smooth Yellow False Foxglove	<i>Aureolaria flava</i>	Threatened	Essex, Norfolk, Walpole, Hamilton, Waterloo, Halton	No	No observations in area/habitat not present.
Spotted Wintergreen	<i>Chimaphila maculata</i>	Threatened	Dry oak pine woodland habitats with sandy soils.	No	No observations in area/habitat not present.
Stiff-leaved Showy Goldenrod	<i>Solidago rigidiuscula</i>	Endangered	Southwestern and Northwestern Ontario	No	No observations in area/habitat not present.
Virginia Goat's-rue	<i>Tephrosia virginiana</i>	Endangered	Acidic sand deposits in remnant black oak savannah.	No	No observations in area/habitat not present.
Virginia Mallow	<i>Sida hermaphrodita</i>	Endangered	Loose sandy or rocky soils which are wet, usually around rivers, ditches or railroads.	No	No observations in area/habitat not present.
Western Silvery Aster	<i>Symphyotrichum sericeum</i>	Endangered	Open bur oak savannahs on shallow soils or bedrock.	No	No observations in area/habitat not present.
White Prairie Gentian	<i>Gentiana alba</i>	Endangered	Sunny oak hickory savannah.	No	No observations in area/habitat not present.
White Wood Aster	<i>Eurybia divaricata</i>	Threatened	open dry deciduous forests dominated by Beech and Sugar maple	No	No observations in area/habitat not present.

Wild Hyacinth	<i>Camassia scilloides</i>	Threatened	Openings in woodlots, shrubby areas and forest edges with rich soil.	No	No observations in area/habitat not present.
Willowleaf Aster	<i>Symphyotrichum praealtum</i>	Threatened	Oak Savannas, along roadsides, railways, abandoned fields.	No	No observations in area/habitat not present.
Wood-poppy	<i>Stylophorum diphyllum</i>	Endangered	Rich mixed deciduous woodlands, forested ravines and slopes along wooded streams.	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Provide Rationale
Golden eyed-lichen	<i>Teloschistes chrysophthalmus</i>	Endangered	Open habitats near water on various tree species.	No	No observations in area/habitat not present.
Pale-bellied frost lichen	<i>Physconia subpallida</i>	Endangered	Requires open habitat, the bark of hardwood trees such as White ash, Black walnut, and American elm. It can also be found growing on fence posts and boulders.	No	No observations in area/habitat not present.
Spoon-leaved moss	<i>Bryoandersonia illecebra</i>	Endangered	low-lying areas that are seasonally flooded under trees or shrub thickets, associated with swamps, marshes, and wet meadows.	No	No observations in area/habitat not present.
White-rimmed Shingle Lichen	<i>Fuscopannaria leucosticte</i>	Endangered	Thunder Bay, Quetico, Rainy River, Superior PP	No	No observations in area/habitat not present.

Common Name	Latin Name	Status	Habitat Characteristics	Candidate for Subject Property? Yes or No or Possible	Rationale
Aweme borer moth	<i>Papaipema aweme</i>	Endangered	prairie habitats, such as sand dunes and oak savannas.	No	No observations in area/habitat not present.
Bogbean buckmoth	<i>Hemileuca sp. 1</i>	Endangered	restricted to open, chalky, low shrub fens containing large amounts of bogbean.	No	No observations in area/habitat not present.
False-foxglove Sun Moth	<i>Pyrrhia aurantiago</i>	Endangered	Pinery, Windsor, London Delhi	No	No observations in area/habitat not present.
Gypsy Cuckoo Bumble Bee	<i>Bombus bohemicus</i>	Endangered	Occurs in diverse habitats such as open meadows, agricultural and urban areas, boreal forest and woodlands.	No	No observations in area/habitat not present.
Hine's emerald	<i>Somatochlora hineana</i>	Endangered	groundwater-fed wetlands with grassy vegetation.	No	No observations in area/habitat not present.
Hoptree Borer	<i>Prays atomocella</i>	Endangered	Common Hoptree.	No	No observations in area/habitat not present.
Hungerford's crawling water beetle	<i>Brychius hungerfordi</i>	Endangered	small to medium-sized streams with cool, high quality, fast-flowing water, often immediately downstream from beaver dams, culverts and man-made barriers.	No	No observations in area/habitat not present.
Lake Huron Grasshopper	<i>Trimerotropis huroniana</i>	Threatened	lives exclusively in open dune habitat along the shores.	No	No observations in area/habitat not present.
Laura's clubtail	<i>Stylurus laurae</i>	Endangered	shallow, sandy or sandy-muddy bottomed creeks with forested shorelines.	No	No observations in area/habitat not present.

Mottled duskywing	<i>Erynnis martialis</i>	Endangered	meadows, open barrens, sandy patches among woodlands, and alvars.	No	No observations in area/habitat not present.
Nine-spotted Lady Beetle	<i>Coccinella novemnotata</i>	Endangered	Almost any habitat. No Records since 1990	No	No observations in area.
Northern barrens tiger beetle	<i>Cicindela patruela</i>	Endangered	sandy oak-pine woodlands and savannah.	No	No observations in area/habitat not present.
Pygmy snaketail	<i>Ophiogomphus howei</i>	Endangered	large, fast flowing rivers having substrates of sand and gravel.	No	No observations in area/habitat not present.
Rapids clubtail	<i>Phanogomphus quadricolor</i>	Endangered	found in clear, cool medium-to-large rivers with gravel shallows and muddy pools.	No	No observations in area/habitat not present.
Riverine clubtail	<i>Stylurus amnicola</i>	Endangered	streams and rivers with sandy, muddy, or gravely beds.	No	No observations in area/habitat not present.
Rusty-patched bumble bee	<i>Bombus affinis</i>	Endangered	open habitat such as mixed farmland, urban settings, savannah, open woods and sand dunes.	No	No observations in area/habitat not present.
Transverse Lady Beetle	<i>Coccinella transversoguttata</i>	Endangered	Almost any habitat. No Records since 1990	No	No observations in area.

Appendix B

Significant Wildlife Habitat Screening

<u>Wildlife Habitat</u>	<u>Wildlife Species</u>	<u>ELC Ecosite Codes</u>	<u>Habitat Criteria and Information Sources</u>	<u>Candidate SWH? Yes or No or Possible</u>	<u>Provide Rationale</u>
<u>Seasonal Concentration Areas of Animals</u>	-	-			
Waterfowl Stopover and Staging Areas (Terrestrial)	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.	No	Habitat feature not present on site or adjacent lands.
Waterfowl Stopover and Staging Areas (Aquatic)	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	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3, SAS1, SAM1, SAF1, SWD1, SWD2, SWD3, SWD4, SWD5, SWD6, SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Need aggregations of 100 or more of listed species for 7 days and >700 waterfowl use days.	No	Habitat feature not present on site or adjacent lands.

Shorebird Migratory Stopover Area	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	BB01, BB02, BBS1, BBS2, BBT1, BBT2, SD01, 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 are extremely important. Need 3 or more listed species and >1000 shorebird use days in spring or fall migration period to confirm significance.	No	Habitat feature not present on site or adjacent lands.
Raptor Wintering Area	Rough-legged Hawk, Red-tailed Hawk, Northern Harrier, American Kestrel, Snowy Owl Special Concern: Short-eared Owl	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.	Habitat consists of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Need to be >20Ha with combination of forest and upland.	No	Habitat feature not present on site or adjacent lands.
Bat Hibernacula	Big Brown Bat, Little Brown Myotis, Eastern Pipistrelle/Tri-coloured Bat, Northern Myotis, Eastern Small-footed Myotis	CCR1, CCR2, CCA1, CCA2 (buildings not considered SWH)	Caves, mine shafts, underground foundations and Karsts. Studies should be done during the peak swarming period (Aug-Sept).	No	Habitat feature not present on site or adjacent lands.

Bat Maternity Colonies	Big Brown Bat, Little Brown Myotis, Silver-haired Bat, Northern Myotis	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD, FOM	Tree cavities, vegetation and often in buildings. Not caves and mines in Ontario. Located in mature (>80 yrs old) deciduous or mixed forest stands with > 10Ha large diameter (>25cm dbh) wildlife tree (snags).	Possible	Habitat feature possible within woodlands.
Bat Migratory Stopover Area	Hoary Bat, Eastern Red Bat, Silver-haired Bat	No specific ELC types.		Possible	Habitat feature possible on forested portion of property.
Turtle Wintering Areas	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.	Water has to be deep enough not to freeze and have soft mud substrates. Permanent waterbodies, large wetlands, and bogs or fens with adequate dissolved oxygen.	No	Habitat feature not present on subject property.
Reptile Hibernaculum	Snakes: Eastern Gartersnake, Northern Watersnake, Northern Red-bellied Snake, Northern Brownsnake, Smooth Green Snake, Northern Ring-necked Snake Special Concern: Milksnake, Eastern Ribbonsnake	Any ecosites in Ontario.	Sites located below frost lines in burrows, rock crevices and other natural locations. Areas of broken and fissured rock are valuable since they provide access to sites below the frost lines. Wetlands can also be important over-wintering habitat.	No	Habitat feature not present on site or adjacent lands.

	Lizard: Special Concern (Southern Shield population): Five-lined Skink				
Colonial-Nesting Bird Breeding Habitat (Bank and Cliff)	Bank Swallow, Cliff Swallow, Northern Rough-winged Swallow	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles (Bank Swallow and N. Rough-winged Swallow). Cliff faces, bridge abutments, silos, barns (Cliff Swallows). Habitat found in the following ecosites: CUM1, CUT1, CUS1, BLO1, BLS1, BLT1, CLO1, CLS1, CLT1	Exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Man-made structures or recently disturbed soil areas (berms/embankments/stockpiles not included.	No	Habitat feature not present on site or adjacent lands.
Colonial Nesting Bird Breeding Habitat (Trees/Shrubs)	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. Most nests in trees are 11-15m from ground, near the top of the tree.	No	No nests observed on subject property or adjacent lands.
Colonial Nesting Bird Breeding Habitat (Ground)	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;	Any rocky island or peninsula within a lake or large river. Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird).	No	Habitat feature not present on site or adjacent lands.

		MAS1 – 3; CUM, CUT, CUS			
Migratory Butterfly Stopover Areas	Painted Lady, White Admiral Special Concern: Monarch	Combination of ELC Community Series; need to have present one Community Series from each landclass: Field: CUM, CUT, CUS Forest: FOC, FOD, FOM, CUP Anecdotally, a candidate sight for butterfly stopover will have a history of butterflies being observed.	need minimum 10Ha with field and forest habitat and needs to be located within 5 Km of LO.	No	Habitat feature not present on site or adjacent lands.
Landbird Migratory Stopover Areas	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.on.ec.gc.ca/wildlife_e.html All migrant raptors species. Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC, FOM, FOD, SWC, SWM, SWD	woodlots>10Ha and within 5 Km of LO, woodlots located on peninsulas or points or oriented in N to S direction along the shore and located within 5 Km of LO.	No	Habitat feature not present on site or adjacent lands.
Deer Yarding Areas	White-tailed Deer	Note: OMNR 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;		No	Habitat feature not present on subject property.

		CUP2, CUP3, FOD3, CUT			
Deer Winter Congregation Areas	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.		No	Habitat feature not present on subject property.

Rare Vegetation Communities	-	-			
Talus Slope (Cliffs and Talus Slopes)		Any ELC Ecosite within Community Series: TAO, TAS, TAT, CLO, CLS, CLT	Cliff and talus slopes occur along the Niagara Escarpment.	No	Vegetation feature not present on site.
Sand Barren		ELC Ecosites: SB01, SBS1, SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SB01), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.	Exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Little or no solid and the underlying rock protrudes through the surface. Usually located within forests or savannah. Vegetation can vary from patchy and barren to tree covered by less than 60%.	No	Vegetation feature not present on site.
Alvar		ALO1, ALS1, ALT1, FOC1, FOC2, CUM2, CUS2, CUT2-1, CUW2	Unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. Alternating periods of inundation and drought. Sparse lichen-moss, grasslands, shrublands and indicator plants. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	No	Vegetation feature not present on site.
Old Growth Forest		Forest Community Series: FOD, FOC, FOM	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. Stands 30Ha or greater in size or with at least 10Ha interior habitat assuming 100m buffer at edge of forest.	No	Vegetation feature not present on site.

Savannah		TPS1, TPS2, TPW1, TPW2, CUS2	Tallgrass prairie habitat that has tree cover between 25-60%. No minimum size to site.	No	Vegetation feature not present on site.
Tallgrass Prairie		TPO1, TPO2	Has ground cover dominated by prairie grasses. An open tallgrass prairie habitat has < 25% tree cover. No minimum size to site.	No	Vegetation feature not present on site.
Other Rare Vegetation Communities		Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTGcxlviii. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Alvar, cliffs, beaches, fens, forest, marsh, barrens, dunes, swamps, and prairies.	No	Vegetation feature not present on site.

<u>Specialized Habitat for Wildlife</u>	-	-			
Waterfowl Nesting Area	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 Provincially Significant Wetlands	Extends 120m from a wetland (>0.5 Ha) or a wetland (>0.5Ha) within 120m or a cluster of 3 or more small (<0.5Ha) wetlands within 120m of each individual wetland where waterfowl nesting is known to occur.	No	Habitat feature not present on site.
Bald Eagle and Osprey Nesting, Foraging and Perching 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	A list of ecosites directly adjacent to riparian areas-rivers, lakes, ponds and wetlands. Nests along forested shorelines, islands, or on structures over water. Osprey nests: top of tree, Eagle nests: in super canopy trees in notch within the tree's canopy.	No	Habitat feature not present on site.
Woodland Raptor Nesting Habitat	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. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees.	Possible	Habitat feature possible on adjacent lands.

Turtle Nesting Areas	Midland Painted Turtle Special Concern Species: Northern Map Turtle, Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) cxlviii or within the following ELC Ecosites: MAM2, MAM3, MAM4, MAM5, MAM6, MAM1, MAM2, MAM3, SAS1, SAM1, SAF1, BOO1, FEO1	Exposed mineral soil areas adjacent or within the listed ecosites. Close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. It must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas.	No	Habitat feature not present on site or adjacent lands.
Seeps and Springs	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.	Areas where groundwater comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.	No	Habitat feature not present on subject property.
Amphibian Breeding Habitat (Woodland)	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, SWD 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 risk to migrating amphibians	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 risk to migrating amphibians. Presence of a wetland, lake, or pond within or adjacent (within 120m) to a woodland (no minimum size). Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat.	Possible	Habitat feature possible on adjacent lands.

Amphibian Breeding Habitat (Wetland)	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.	Wetlands and pools >500m2 supporting high species diversity, small or ephemeral habitats could also be significant. Presence of shrubs and logs increase significance of pond for some amphibian species (structures for calling, foraging, escape and concealment from predators). Permanent waterbodies with abundant emergent vegetation (bullfrogs).	Possible	Habitat feature possible on adjacent lands.

<u>Habitat for Species of Conservation Concern</u>	-				
Marsh Bird Breeding Habitat	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, FE01, BO01 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.	No	Habitat feature not present on site or adjacent lands.
Woodland Area-Sensitive Bird Breeding Habitat	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 >30Ha. Interior forest is at least 100m from forest edge habitat.	Possible	Habitat feature possible on adjacent lands.
Open Country Bird Breeding Habitat	Upland Sandpiper, Grasshopper Sparrow, Vesper Sparrow, Northern Harrier, Savannah Sparrow Special Concern: Short-eared Owl	CUM1 CUM2	Large grassland areas >30Ha. Not Class 1 or 2 agricultural lands and not being actively used for farming.	No	Habitat feature not present on site or adjacent lands.

Shrub/Early Successional Bird Breeding Habitat	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 natural field areas succeeding to shrub and thicket habitats >30Ha in size.	No	Habitat feature not present on subject property.
Terrestrial Crayfish	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crawfish or Meadow Crayfish; (Cambarus Diogenes)	MAM1, MAM2, MAM3, MAM4, MAM5, MAM6, MAS1, MAS2, MAS3	Meadow and edges of shallow marshes (no minimum size) identified should be surveyed for terrestrial crayfish.	No	Habitat feature not present on site or adjacent lands.
Special Concern and Rare Wildlife Species	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		Discussed within EIS,	Discussed within EIS
<u>Animal Movement Corridors</u>	-	-			
Amphibian Movement Corridors	Eastern Newt, Blue-spotted Salamander, Spotted Salamander, Gray Treefrog, Spring Peeper, Western Chorus Frog, Wood Frog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant	Corridors may be found in all ecosites associated with water. Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding	No	Habitat feature not present on subject property.

		breeding habitat for these species in Table 1.1	habitat is confirmed as SWH.		
Deer Movement Corridors	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.		No	Habitat feature not present on subject property.