

March 30, 2020

OEC 20-036

Celeste Phillips Planning Inc.
85 Bayfield Street
Suite 300
Barrie, Ontario

Attention: Celeste Phillips

**Re: Scoped Environmental Impact Study
Lot 9 Concession 12, Township of Tiny**

Dear Ms. Phillips:

Orion Environmental was retained to undertake a Scoped Environmental Impact Study for the property located at Lot 9 Concession 12 in the Township of Tiny, County of Simcoe. The purpose of the report is to assess the potential impacts associated with the development of the aforementioned parcel for residential development. The location of the property is shown on Figure 1. A copy of the proposed development concept is appended.

This report has been revised to incorporate the comments from the Severn Sound Environmental Association in their letter of January 29, 2021 and email of March 1, 2021.

1.0 INTRODUCTION

The subject property is forested and is surrounded by rural and country residential development to the north, west and south. The lands to the east of Overhead Bridge Road are forested with no development. The property is approximately 5.6ha in size and is a linear parcel adjacent to Overhead Bridge Road which wraps around two existing residential lots, as shown in Figure 1.

To establish the scope of the Environmental Impact Study (EIS) for the proposed development we reviewed the applicable planning designations and undertook consultation with the Severn Sound Environmental Association (SSEA). Given the site

characteristics and the lands are not designated as a natural heritage feature by either the County or the Township the following scope of work was proposed by the SSEA to help facilitate the EIS submission now rather than waiting for spring/summer conditions:

1. vascular plant surveys, map and describe vegetation communities using Ecological Land Classification [for lands identified as Significant Woodlands, ELC must include descriptions of species, composition, and age structure], including a survey for Species At Risk (SAR) vegetation.
2. document the presence and location of any previously unknown or undocumented natural heritage features.
3. address SAR and any candidate or confirmed Significant Wildlife Habitat, taking into consideration any applicable federal or provincial policies/legislation and guidance documents
 - a. undertake a Species at Risk (SAR) screening to assess for potential SAR including reviewing species occurrence records and range maps, and a habitat-based assessment of lands to function as habitat for other SAR based on habitat present and as identified through field studies;
 - b. identify, map and describe all potential SWH within the study area, using the current SWH Ecoregion Criteria Schedules.
4. record incidental wildlife observations during field investigations and assess wildlife habitat functions
5. assess potential direct and indirect impacts of proposal on natural heritage features/functions, provide recommendations to avoid and/or mitigate negative environmental impacts, including establishing appropriate buffers to natural heritage features based on an ecological rationale that will protect the features and their associated functions from anticipated or potential impacts of development
6. map natural features, vegetation communities, and other environmental areas and proposed development on current, high quality aerial imagery.
7. identify appropriate lot size(s) and configuration(s), including appropriate building envelopes for development [Depending on on-site conditions and features, these may or may not differ from initial concept(s)]

SSEA agreed the results of initial SAR screening and preliminary determination of any potential Significant Wildlife Habitat on the subject lands could be submitted to the Township and County now. Based on the findings of this report the SSEA will determine if there is a need for any additional field work or specific surveys in 2021 (e.g., bat snag surveys, breeding bird surveys, other targeted SAR surveys).

2.0 BACKGROUND INFORMATION

2.1 Property Description

The subject property is approximately 5.6ha and is forested. The property is designated Country Residential in Schedule A – Land Use, zoned Future Development and not designated as a natural feature in the Township of Tiny Official Plan and zoning bylaw mapping. The County of Simcoe Land Use Schedule 5.1 designates the lands as Rural. The Township has designated the lands for future development given the adjacent residential development and its proximity to Overhead Bridge Road. Copies of the mapping are appended.

3.0 NATURAL HERITAGE FEATURE ASSESSMENT

To evaluate the impact of the development of the parcel an assessment of the natural heritage features on the property and the surrounding land uses was undertaken. The field survey was undertaken on November 29, 2020 under cloudy conditions, trees lacked leaves and no snow cover.

3.1 Vegetation

The ELC community is Dry Oak – Pine Mixed Forest FOM1 on well drained Tioga Sandy Loam. The site is dominated by Red Oak and Sugar Maple with Red Pine and White Pine present in smaller numbers. White Ash, Beech and White Birch are present but in limited numbers. Both our site review and an arborist report prepared by Peter Wright in 2017 confirmed no Butternut are present on the site, copy attached. Trees ranged in size from 30cm DBH to a few trees up to 130cm DBH. The understory vegetative grow is limited which is typical for a woodlot with a high closed canopy that acts to limit light penetration to promote vegetative growth. Photos of the site conditions are appended.

Herbaceous vegetation could not be assessed due to the time of the site visit (November 30th) and the heavy leaf mat from fallen deciduous leaves. Based on my experience I did not encounter any unique conditions that could potentially provide habitat for rare vegetative species.

Review of the vegetation Species At Risk based on the most current MNRF list did not identify any species with could potentially be present based on their habitat conditions. Table 1 presents the SAR assessment for the property.

3.2 Species at Risk

Review of the Ministry of Natural Resources and Forestry (MNR) Natural Heritage Centre Information Centre (MHIC) data base showed Eastern Massasauga Rattlesnake (Threatened), Eastern Meadowlark (Threatened) and Eastern Milksnake (Special Concern) within the 1km NHIC grid on the property and the adjacent lands with comparable habitat.

The site lacks significant habitat for Massasauga as it lacks fractured bedrock, wetlands or animal burrows on slopes that would provide hibernation opportunities, nor does the site provide open dry habitats for pregnant females to thermoregulate.

There is no grassland habitat for Eastern Meadowlark on-site.

There is potential habitat for Eastern Milksnake is not present on the site. It lacks open and edge habitat for thermoregulation, rocky outcrops or old stone foundations and wetland/riparian habitat.

There is potential habitat for Eastern Wood Pewee although designated of Special Concern, it is commonly found in forested lands in Simcoe County. Special Concern species are not provided with any legislated habitat protection.

Table 1 provides a SAR assessment based on the current MNR SAR species listing for the County. A number of the bird species identified by MNR were listed by Birds Canada within square 17TNK85 which encompasses the subject property and the Penetanguishene area, however the majority did not have suitable habitat on the property.

The site was surveyed for potential bat snag trees by traversing the woodlot on random transects. As shown in the attached photos the woodlot is predominately an uneven aged stand lacking large mature trees in a state of decay that would provide snags for potential bat maternity roosting habitat. Although a few trees showed snags capable of providing maternity roosting opportunities there was not 10 snags/ha for the property to be defined as potentially significant bat maternity roosting habitat. In addition, the predominance of forest cover in the area for potential maternity roosting the implementation of the October 31st to April 15th timing window for tree removal would avoid any potential impact to the species. In our experience the Ministry of Environment Conservation and Parks is using timing windows to address protection of the species in municipalities that are predominately forested. An Information Gathering Form is being submitted to SAROntario for their review on this issue.

3.3 Significant Wildlife Habitat

Table 2 provides our Significant Wildlife Habitat (SWH) evaluation using the MNRF Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E. Based on the criteria and the habitat characteristics on-site there are no significant SWH concerns with the development of the proposed lots. Removal of trees within the lots for house construction would still be expected to retain forest cover on the lots based on the adjacent developed lots retained tree cover. Interior forest habitat would remain within the forested lands between Whip-poor-will Drive and Overhead Bridge Road. It is expected the retained forest cover would continue to provide habitat for species that would currently use the area.

No wildlife activity was observed at the time of the site visit.

3.4 Wetlands/Aquatic Habitat

The site does not contain any seeps, ground water discharge, drainage features or watercourses. The Simcoe County GIS mapping shows an unevaluated wetland in the northern limits of the property. Review of the site did not identify any wetland feature which is not unexpected given the sandy nature of the soils. Based on the County topography mapping the site slopes at approximately 3% from south to north and off-site the land continues to slope north downward toward a stream valley approximately 900m to the north. This slope combined with the sandy overburden would not support wetland within the site.

3.5 Significant Woodlands

The Township has designated the subject property as Significant Woodlands as shown in the attached Tiny Township Schedule B Natural Heritage Features. The residential development surrounding the property is not designated as Significant Woodland. To determine the potential rationale for the designation of the lands as Significant Woodland it was reviewed using the MNRF criteria for Significant Woodlands and our findings during the field visit. The analysis is provided in Table 3.

The significant woodland evaluation criteria recommended in the MNRF Natural Heritage Reference Manual (2010) were reviewed with regard to the subject property compliance to the criteria. The Township of Tiny has 30-60% forest cover so the criteria specific to that factor were applied. The property plus the adjacent undeveloped forest within the existing residential development that surrounds the site is less than 50ha therefore it does not meet the woodland size criteria. Interior habitat on the property is approximately 1ha. If you incorporate the adjacent lands the interior habitat is less than 8ha due to the break in forest cover from the surrounding residential development and

the break created by Overhead Bridge Road to the east so the land does not meet the woodland interior criteria. The property is not part of, or in proximity to a significant natural feature or fish habitat, it does not provide a linkage function for movement between significant habitats, lacks ground water discharge or seeps, lacks a high diversity of native forest species or habitat, lacks any unique species composition or old growth woodlands and has no significant economic or social values providing economically valuable products, educational, cultural or historic value.

The property is located a designated highly vulnerable aquifer or significant groundwater recharge area as defined in Township Official Plan Schedule E Source Water Protection. Compliance with one criterion in the significant woodland assessment based on MNR's direction the woodland would be considered significant. Based on our analysis this appears to be the rationale for the Township's designation of the property as significant woodland.

The predominance of sandy soils in the Township has resulted in a significant portion of the municipality being designated as highly vulnerable aquifer or significant groundwater recharge areas. Rural residential development does not result in a significant impervious area that would adversely impact infiltration so there is no expectation ground water recharge functions would be impacted.

4.0 PLANNING CONTEXT

4.1 Provincial Policy Statement

In Ontario, the *Planning Act* provides the legislative basis for land use planning. The *Act* establishes a framework for identifying matters of provincial interest (Section 2) and for the creation of Policy Statements. In particular, Section 3 of the *Planning Act* has enabled the formulation and release of the Provincial Policy Statement (2020).

The Provincial Policy Statement (PPS) provides policy direction on matters of provincial interest related to land use planning and development. The PPS represents a policy-led planning system on matters such as sustainable development, the protection of ecological systems, the conservation of natural resources, the protection of agricultural resources, and the appropriate location for growth and development.

Section 2.1.5 of the PPS (Building Strong Healthy Communities) states the following:

Development and site alteration shall not be permitted in:

- a) *significant wetlands* in the Canadian Shield north of Ecoregions

- 5E, 6E and 7E¹;
- b) *significant woodlands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;
- c) *significant valleylands* in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River)¹;
- d) *significant wildlife habitat*;
- e) *significant areas of natural and scientific interest*; and
- f) *coastal wetlands* in Ecoregions 5E, 6E and 7E¹ that are not subject to policy 2.1.4(b)

unless it has been demonstrated that there will be no *negative impacts* on the natural features or their *ecological functions*.

The subject lands do not contain any of the above natural heritage features.

Section 2.1.7 states; *Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.* The property does not contain habitat for endangered or threatened species.

4.2 A Place to Grow, Growth Plan for the Greater Golden Horseshoe

A Place to Grow, Growth Plan for the Greater Golden Horseshoe (2019) is a provincial plan issued under the legislative authority of *The Places to Grow Act (2005)*. In general, the Growth Plan provides provincial direction on matters of growth, development and the protection of natural features within the Province. The lands are designated as part of the Natural Heritage System. A map of the NHS is appended.

The Plan under Section 4.2.2. provides municipalities with the ability to refine the Natural Heritage System to reflect the Official Plan policies, more accurately define the natural heritage features while protecting these features in a manner consistent with the PPS.

Section 4.2.2.3 of the Growth Plan states; Within the Natural Heritage System for the Growth Plan:

- a) new development or site alteration will demonstrate that:
 - i. there are no negative impacts on key natural heritage features or key hydrologic features or their functions;
 - ii. connectivity along the system and between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained or, where possible, enhanced for the movement of native

- plants and animals across the landscape;
- iii. the removal of other natural features not identified as key natural heritage features and key hydrologic features is avoided, where possible. Such features should be incorporated into the planning and design of the proposed use wherever possible;
- iv. except for uses described in and governed by the policies in subsection 4.2.8, the disturbed area, including any buildings and structures, will not exceed 25 per cent of the total developable area, and the impervious surface will not exceed 10 per cent of the total developable area;
- v. with respect to golf courses, the disturbed area will not exceed 40 per cent of the total developable area; and
- vi. at least 30 per cent of the total developable area will remain or be returned to natural self-sustaining vegetation, except where specified in accordance with the policies in subsection 4.2.8; and

Review of the Natural Heritage System (NHS) mapping shows the subject property is in the NHS but also shows the undeveloped portions of the adjacent residential lots have been excluded. The exclusion of the dwellings would indicate the Province is of the opinion that the retained forest on the large residential lots in the area will continue to function as part of the NHS. Review of the mapping also shows residential development included in the NHS which appears to reinforce rural and country residential development in areas of extensive forest cover will not adversely impact the functions of the surrounding natural heritage features. In our opinion development of the property would not compromise the NHS as defined in the area. It is noted as well that the property is designated Country Residential in the Township's Official Plan and zoned Future Development (FD).

4.3 County of Simcoe Official Plan

The subject land is designated Rural in the County Official Plan. Section 3.7.10 States; *Development in rural areas should whenever possible be designed and sited on a property so as to minimize adverse impacts on agriculture and to minimize any negative impact on significant natural heritage features and areas and cultural features.*

Our assessment confirmed the property does not contain any significant natural heritage features. Therefore, the proposed development would be in compliance with the County Official Plan with regard to protection of natural heritage features.

4.4 Township of Tiny Official Plan

The June 2018 draft Official Plan adopted by Council in Section B.2.7 Significant Woodlands defines significant woodlands as follows:

B.2.7.1 Significant Woodlands are woodlands that are:

- a) Ecologically important in terms of features, such as species composition, age of trees or stand history;
- b) Functionally important due to its contribution to the broader landscape because of its location, size or due to the amount of forest cover in the planning area; and/or,
- c) Economically important due to site quality, species composition, or past management history

Section B.2.7.3 states significant woodlands are identified as woodlands that are 50 hectares in size or larger. and are identified on Schedule B.

Based on our analysis the woodlands on the subject lands do not comply with the Section B.2.7.1 criterion and are isolated from the larger forested areas to the east from the municipal right-of-way for Overhead Bridge Road which is in excess of 20m.

Based on our analysis presented in Table 1 it appears the lands are designated significant woodlands based on the Water Protection Criteria. Mitigation measures are available to ensure protection of ground water resources. There is no expectation the proposed lots would impact ground water recharge with runoff from the homes being discharged to the native soils. In our opinion, the proposed development will be in compliance with the Township natural heritage policies and objectives.

5.0 MITIGATIVE MEASURES

Given the limited diversity of natural features on the property the mitigative measures are limited to the protection of breeding birds and maternity roosting habitat for bats.

No tree or shrub clearing should be undertaken during the breeding bird window. If trees or shrubs are to be cleared prior to construction, clearing should not take place between April 1 and August 31 in order to avoid destruction of active bird nests protected by the Migratory Bird Convention Act. Alternatively, a nest search should be conducted by a qualified ornithologist in the area designated for clearing and any active nests found are not to be disturbed by site clearing, servicing, and construction activity until the nesting young have fledged. Vegetation clearing will take place no later than three days after the nest search; otherwise the nest search is required to be repeated.

No tree or shrub clearing should be undertaken during the maternity roosting window for bats between April 1st to October 31st. Although the site does not contain any significant maternity roosting habitat, we recommend the timing window for tree removal be adhered to protect the species potential use of the area.

6.0 CONCLUSION

Our review of the property did not identify any unique features that should be avoided in the development of the lots. The wetland reported at the north west corner of the property did not exist. The forest cover was homogenous throughout the parcel and did not have any significant old growth trees that would warrant protection.

In our opinion the Subject Property can be developed without any adverse impact on significant natural heritage features. The reasons for our conclusions are the following:

- The lands are designated by the Township as a Significant Woodland under the environmental policies of their Official Plans; however, the designation appears to be based solely on ground water that will not be adversely impacted by the development.
- Development of the site can be done in compliance with natural heritage policies of the Growth Plan.
- Threatened and Endangered Species at Risk reported for the area did not have suitable habitat on site to deem it significant habitat.
- A bat snag survey of the property did not identify sufficient snag trees to meet the MNRF 10 snag/ha criteria.
- No significant interior habitat for breeding birds based on MNRF criteria.
- Significant Wildlife Habitat is limited to Eastern Milksnake, Eastern Wood Pewee and Wood Thrush (Special Concern) which is reported to be in the area. The species is common throughout Simcoe County forests and the habitat will remain post development.
- The site meets only the water protection MNRF criteria for Significant Woodlands.
- No unique forest vegetative communities are present.
- No drainage features/watercourses/wetland/seeps are present.
- No old growth forest cover is present.
- The site does not provide any significant linkage functions to adjacent habitats.

- The lands are designated for development in both the Township of Tiny Official Plan and Zoning By-law.

In our opinion, no natural heritage features or functions are present that would require further field study in 2021 to confirm the site suitability for development.

If you have any questions or require further information, please do not hesitate to call.

Yours truly,

ORION ENVIRONMENTAL SOLUTIONS, INC.



Paul Neals, B.Sc. Agr., P.Ag.
Principal

PCN:

Attach:

BACKGROUND INFORMATION

Published Information Sources

A Place to Grow, Growth Plan for the Greater Golden Horseshoe, 2020.

County of Simcoe Official Plan, 2016

Ministry of Natural Resources and Forestry, Natural Heritage Reference Manual, 2010.

Ministry of Natural Resources and Forestry, Simcoe County Species at Risk list, 2017.

Ministry of Natural Resources and Forestry, Natural Heritage Information Centre, data base.

Provincial Policy Statement (2020)

Province of Ontario, A Place to Grow, Growth Plan for the Greater Golden Horseshoe, May 2019.

Township of Tiny Official Plan, February 2015.



LEGEND



Subject Property

FOM1 - Dry Oak - Pine Mixed Forest

Note: 2018 aerial photo from maps.simcoe.ca

ORION ENVIRONMENTAL SOLUTIONS

DATE ISSUED: DEC 2020

CREATED BY: PCN

PROJECT NO. - 20-036

Not To Scale

Figure 1
Site Location

Table 1. Species at Risk and Special Concern Assessment, Overhead Bridge Road, Township of Tiny, Simcoe County

Taxa ¹	Common Name	Scientific Name	SARO Status	Habitat Requirements ²	Habitat on Property or Adjacent Lands?	Reported Locally in Data Sources ³	Detected During Field Surveys? ⁴	Issue Affecting Proposed Development?
Amphibian	Jefferson Salamander	<i>Ambystoma jeffersonianum</i>	END	In Canada, found exclusively in southern Ontario (e.g. Niagara Escarpment area). Deciduous forests with vernal pools/pond within or adjacent.	No suitable habitat present	No		
Bird	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	A variety of habitats adjacent a major lake or river.	No suitable habitat present	Yes		
Bird	Bank Swallow	<i>Riparia riparia</i>	THR	Riparian habitat with sand banks for nesting	No suitable habitat present	Yes		
Bird	Barn Swallow	<i>Hirundo rustica</i>	THR	Grasslands, pastures, graminoid and other open wetlands	No suitable habitat present	Yes		
Bird	Black Tern	<i>Chlidonias niger</i>	SC	Large marsh wetlands	No suitable habitat present	Yes		
Bird	Bobolink	<i>Dolichonyx oryzivorus</i>	THR	Grasslands	No suitable habitat present	Yes		
Bird	Canada Warbler	<i>Cardellina canadensis</i>	SC	Breeds in a range of deciduous and coniferous, usually wet forest types, all with a well- developed, dense shrub layer - generally associated with the southern shield/boreal shield.	No suitable habitat present	Yes		
Bird	Cerulean Warbler	<i>Dendroica cerulea</i>	THR	Large blocks of continuous forest/swamp cover	No suitable habitat present	No		
Bird	Chimney Swift	<i>Chaetura pelagica</i>	THR	Typically built features (chimneys, buildings), also caves, or tree cavities in old growth forests	No suitable habitat present	Yes		
Bird	Common Nighthawk	<i>Chordeiles minor</i>	SC	Open woodlands (scattered tree cover), rock barrens and similar habitats providing mix of open land and shrub/tree cover.	No suitable habitat present	No		
Bird	Eastern Meadowlark	<i>Sturnella magna</i>	THR	Grasslands	No suitable habitat present	Yes		
Bird	Eastern Whip-poor-will	<i>Caprimulgus vociferus</i>	THR	Open woodlands (scattered tree cover), rock barrens and similar habitats providing mix of open land and shrub/tree cover.	No suitable habitat present	Yes		

Taxa ¹	Common Name	Scientific Name	SARO Status	Habitat Requirements ²	Habitat on Property or Adjacent Lands?	Reported Locally in Data Sources ³	Detected During Field Surveys? ⁴	Issue Affecting Proposed Development?
Bird	Eastern Wood-pewee	<i>Contopus virens</i>	SC	Forests, treed swamps	Suitable habitat present	Yes		Commonly found in forested lands is Simcoe County, sufficient forested habitat is area to avoid impact to species
Bird	Golden-winged Warbler	<i>Vermivora chrysoptera</i>	SC	Shrublands/thickets, forest edges	No suitable habitat present	No		
Bird	Grasshopper Sparrow	<i>Ammodramus savannarum</i>	SC	Large grasslands	No suitable habitat present	No		
Bird	Henslow's Sparrow	<i>Ammodramus henslowii</i>	END	Large grasslands	No suitable habitat present	No		
Bird	King Rail	<i>Rallus elegans</i>	END	Large marsh wetlands	No suitable habitat present	No		
Bird	Least Bittern	<i>Ixobrychus exilis</i>	THR	Large marsh wetlands	No suitable habitat present	Yes		
Bird	Loggerhead Shrike	<i>Lanius ludovicianus</i>	END	Alvars, large pasturelands with shrub cover	No suitable habitat present	No		
Bird	Louisiana Waterthrush	<i>Seiurus motacilla</i>	THR	Mature forest associated with rivers	No suitable habitat present	No		
Bird	Olive-sided Flycatcher	<i>Contopus cooperi</i>	SC	Breeding occurs within coniferous or mixed forests adjacent rivers or wetlands. More often present along forest edges and clearings, including recently logged/burned areas.	No suitable habitat present	No		
Bird	Piping Plover	<i>Charadrius melodus</i>	END	Dry sandy or gravelly beaches along wetlands, rivers, or lakes	No suitable habitat present	No		
Bird	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	SC	Open woodlands, woodland edges, parks, golf courses and cemeteries	No suitable habitat present	No		
Bird	Short-eared Owl	<i>Asio flammeus</i>	SC	Open areas such as grasslands and marshes. Preference for prairies and savannahs.	No suitable habitat present	No		
Bird	Wood Thrush	<i>Hylocichla mustelina</i>	SC	Forests, treed swamps	Suitable habitat present	Yes		Sufficient forest cover in the area to avoid impact to the species
Bird	Yellow Rail	<i>Coturnicops noveboracensis</i>	SC	Shallow wetlands containing reeds, sedges and marshy areas with overlying dry mats of dead vegetation.	No suitable habitat present	No		
Fish	American Eel	<i>Anguilla rostrata</i>	END	In Ontario, connecting waterbodies from the Great Lakes as far inland as Algonquin Park.	No suitable habitat present	No		

Taxa ¹	Common Name	Scientific Name	SARO Status	Habitat Requirements ²	Habitat on Property or Adjacent Lands?	Reported Locally in Data Sources ³	Detected During Field Surveys? ⁴	Issue Affecting Proposed Development?
Fish	Grass Pickerel	<i>Esox americanus vermiculatus</i>	SC	Coastal wetlands in the Great Lakes and tributaries or Lake St. Clair, Lake Erie, Lake Huron, the Niagara River, Lake Ontario and the St. Lawrence River, and inland in the Severn River system.	No suitable habitat present	No		
Fish	Lake Sturgeon	<i>Acipenser fulvescens</i>	THR	Georgian Bay and connected rivers	No suitable habitat present	No		
Fish	Northern Brook Lamprey	<i>Ichthyomyzon fossor</i>	SC	Rivers draining into Lake Superior, Huron and Erie, and the Ottawa River.	No suitable habitat present	No		
Insect	Hine's Emerald (Dragonfly)	<i>Somatochlora hineana</i>	END	Hine's Emeralds rely on slow-moving, calcareous water with emergent vegetation for egg-laying and larval development. These conditions are associated with fens, marshes or areas where groundwater rises to the surface. Only known to occur in Minesing Wetland	No suitable habitat present	No		
Insect	Lake Huron Grasshopper	<i>Trimerotropis huroniana</i>	THR	Lives exclusively in open dune habitat along the shores of Lake Huron, Lake Michigan and Lake Superior.	No suitable habitat present	No		
Insect	Monarch	<i>Danaus plexippus</i>	SC	Caterpillars are confined to meadows and open areas containing milkweed. Adults are widespread, favouring areas with wildflowers.	No suitable habitat present	Yes		
Insect	West Virginia White	<i>Pieris virginiensis</i>	SC	Moist deciduous woodlots containing the plant, Toothwort.	No suitable habitat present	No		
Mammal	American Badger	<i>Taxidea taxus</i>	END	Variety of habitats providing small prey (<i>i.e.</i> groundhogs, rabbits, small rodents) with a preference for tall grass prairie, sand barrens and farmland.	No suitable habitat present	No		
Mammal	Eastern Small-footed Bat	<i>Myotis leibii</i>	END	Winter hibernation - caves, abandoned mines, etc. Summer maternity roost - talis slopes, rock outcrops.	Suitable habitat present	No		Snag trees less than 10/ha, use Oct 31 - April 15th timing window for tree removal
Mammal	Little Brown Myotis	<i>Myotis lucifugus</i>	END	Winter hibernation - caves, abandoned mines, etc. Summer maternity colony - typically buildings (attics, etc.) but occasionally in tree cavities.	Suitable habitat present	No		Snag trees less than 10/ha, use Oct 31 - April 15th timing window for tree removal

Taxa ¹	Common Name	Scientific Name	SARO Status	Habitat Requirements ²	Habitat on Property or Adjacent Lands?	Reported Locally in Data Sources ³	Detected During Field Surveys? ⁴	Issue Affecting Proposed Development?
Mammal	Northern Myotis	<i>Myotis septentrionalis</i>	END	Winter hibernation - caves, abandoned mines, etc. Summer maternity roost - tree cavities.	Suitable habitat present	No		Snag trees less than 10/ha, use Oct 31 - April 15th timing window for tree removal
Mammal	Tri-colored Bat	<i>Perimyotis subflavus</i>	END	Winter hibernation - caves, abandoned mines, etc.. Summer - day roosts and maternity colonies in older forest and occasionally in barns or other structures.	Suitable habitat present	No		Snag trees less than 10/ha, use Oct 31 - April 15th timing window for tree removal
Plant	American Ginseng	<i>Panax quinquefolius</i>	END	Mature forest cover	No suitable habitat present	No		
Plant	American Hart's-tongue Fern	<i>Asplenium scolopendrium</i> var.	SC	Moist deciduous forests, generally associated with Niagara Escarpment.	No suitable habitat present	No		
Plant	Broad Beech Fern	<i>Phegopteris hexagonoptera</i>	SC	Prefers rich, undisturbed deciduous forest, particularly mature beech-maple forests, typically occurs in moister situations such as lower valley slopes, bottomlands and even swamps.	No suitable habitat present	No		
Plant	Butternut	<i>Juglans cinerea</i>	END	Forests, fencerows	Suitable habitat present	No	No	
Plant	Eastern Prairie Ringed-polecat	<i>Platanthera leucophaea</i>	END	Grasslands, wet meadows, alvars, fens	No suitable habitat present	No		
Plant	Englemann's Quillwort	<i>Isoetes engelmannii</i>	END	Grows in shallow water in lakes and rivers (Severn River).	No suitable habitat present	No		
Plant	Forked Three-awned grass	<i>Aristida basiramea</i>	END	Grasslands, open lands, trails (localized distribution)	No suitable habitat present	No		
Plant	Hill's Thistle	<i>Cirsium hillii</i>	THR	Open areas such as prairie, sand dunes and alvar grasslands surrounded by coniferous forests.	No suitable habitat present	No		
Plant	Spotted Wintergreen	<i>Chimaphila maculata</i>	END	Dry oak-pine woodlands with sandy soils close to waterbodies	No suitable habitat present	No		
Reptile	Blanding's Turtle	<i>Emydoidea blandingii</i>	THR	Wetlands with open water	No suitable habitat present	No		
Reptile	Eastern Foxsnake (Georgian Bay Population)	<i>Pantherophis gloydi</i>	END	Rocky habitats with trees and shrubs within, usually within 150 m of a shoreline	No suitable habitat present	No		
Reptile	Eastern Hog-nosed Snake	<i>Heterodon platirhinos</i>	THR	Forests, sand barrens and wetlands providing breeding habitat for primary prey (i.e., American Toad and other amphibians)	No suitable habitat present	No		

Taxa ¹	Common Name	Scientific Name	SARO Status	Habitat Requirements ²	Habitat on Property or Adjacent Lands?	Reported Locally in Data Sources ³	Detected During Field Surveys? ⁴	Issue Affecting Proposed Development?
Reptile	Eastern Musk Turtle	<i>Sternotherus odoratus</i>	SC	Ponds, lakes, marshes and rivers with an abundance of emergent vegetation and muddy bottoms	No suitable habitat present	No		
Reptile	Eastern Ribbonsnake	<i>Thamnophis sauritus</i>	SC	Usually found close to water, especially in marshes, where it hunts for frogs and small fish. Hibernate in aggregations in underground burrows or rock crevices	No suitable habitat present	No		
Reptile	Five-lined Skink (Georgian Bay Population)	<i>Plestiodon fasciatus</i>	SC	Shorelines, rock barrens.	No suitable habitat present	No		
Reptile	Massasauga (Great Lakes-St. Lawrence Population)	<i>Sistrurus catenatus</i>	END	Wide variety of habitats: tall grass prairie, bogs, marshes, shorelines, forests and forest clearings, alvars, rock barrens, and grasslands	No suitable habitat present	Yes		
Reptile	Northern Map Turtle	<i>Graptemys geographica</i>	SC	Lakes	No suitable habitat present	No		
Reptile	Snapping Turtle	<i>Chelydra serpentina</i>	SC	Lakes, ponds, marshes and slow moving rivers, various wetlands with open water	No suitable habitat present	No		
Reptile	Spotted Turtle	<i>Clemmys guttata</i>	END	Wetlands with open water	No suitable habitat present	No		
Reptile	Wood Turtle	<i>Glyptemys insculpta</i>	END	Clear rivers, streams or creeks with a sandy or gravelly bottom. Preference for wooded areas but have also been found in wet meadows, swamps and fields.	No suitable habitat present	No		

¹Comprehensive list compiled based on Species at Risk in Simcoe County - MNRF, Midhurst District (2017)

²Based on the SARO List descriptions (<https://www.ontario.ca/page/species-risk-ontario>). Contact with SAROntario directed us to NHIC data.

³Based on following sources: Species at Risk Ontario (<https://www.ontario.ca/environment-and-energy/species-risk-ontario-list>); Land Information Ontario (<https://www.ontario.ca/page/land-information-ontario>); Make a Natural Heritage Map - Natural Heritage Information Centre (http://www.gisapplication.lrc.gov.on.ca/mamnh/Index.html?site=MNR_NHLUPS_NaturalHeritage&viewer=NaturalHeritage&locale=en-US); Ontario Breeding Bird Atlas (<http://www.birdsontario.org/atlas/maps.jsp?lang=en>); Ontario Reptile and Amphibian Atlas (<https://ontarionature.org/programs/citizen-science/reptile-amphibian-atlas/>), eBird (<https://ebird.org/explore>); Fisheries and Oceans Canada (<http://www.dfo-mpo.gc.ca/species-especies/index-eng.htm>); Fish Online (<https://www.gisapplication.lrc.gov.on.ca/FishONLine/Index.html?site=FishONLine&viewer=FishONLine&locale=en-US>); Ontario Butterfly Atlas (http://www.ontarioinsects.org/atlas_online.htm); and Atlas of the Mammals of Ontario (Dobbyn, J. 1994. Federation of Ontario Naturalists).

⁴Field work done in November 2020. Assessment of potential for SAR species based on habitat present and habitat type used by species.

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Stopover and Staging Areas (Terrestrial)</p> <p>Rationale: Habitat important to migrating waterfowl.</p>	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). <ul style="list-style-type: none"> Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence. Reports and other information available from Conservation Authorities Sites documented through waterfowl planning processes (e.g. EHJV implementation plan) Field Naturalist Clubs Ducks Unlimited Canada Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area 	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” <ul style="list-style-type: none"> Any mixed species aggregations of 100 or more individuals required. The flooded field ecosite habitat plus a 100-300m radius area, dependent on local site conditions and adjacent land use is the significant wildlife habitat. Annual use of habitat is documented from information sources or field studies (annual use can be based on studies or determined by past surveys with species numbers and dates). SWHMIST Index #7 provides development effects and mitigation measures. 	No suitable habitat present
<p>Waterfowl Stopover and Staging Areas (Aquatic)</p> <p>Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Environment Canada Naturalist clubs often are aware of staging/stopover areas OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging. Sites documented through waterfowl planning processes (e.g. EHJV implementation plan) Ducks Unlimited projects Element occurrence specification by Nature Serve: http://www.natureserve.org Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas 	Studies carried out and verified presence of: <ul style="list-style-type: none"> Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH. The combined area of the ELC ecosites and a 100m radius area is the SWH. Wetland area and shorelines associated with sites identified within the SWHTG Appendix K are significant wildlife habitat. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. Annual Use of Habitat is Documented from Information Sources or Field Studies (Annual can be based on completed studies or determined from past surveys with species numbers and dates recorded). SWHMIST Index #7 provides development effects and mitigation measures. 	No suitable habitat present

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<p>Shorebird Migratory Stopover Area</p> <p>Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	<p>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</p>	<p>BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5</p>	<ul style="list-style-type: none"> Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Western hemisphere shorebird reserve network Canadian Wildlife Service (CWS) Ontario Shorebird Survey Bird Studies Canada Ontario Nature Local birders and naturalist clubs Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #8 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>
<p>Raptor Wintering Area</p> <p>Rationale: Sites used by multiple species of individuals and used annually are most significant</p>	<p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p><u>Special Concern:</u> Short-eared Owl Bald Eagle</p>	<p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC.</p> <p>Upland: CUM; CUT; CUS; CUW.</p> <p><u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p>	<ul style="list-style-type: none"> The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors. Raptor wintering sites (hawk/owl) need to be > 20 ha with a combination of forest and upland. Least disturbed sites, idle/fallow or lightly grazed field/meadow (>15ha) with adjacent woodlands. Field area of the habitat is to be windswept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting. <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> OMNRF Ecologist or Biologist Field Naturalist Clubs Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area Data from Bird Studies Canada Results of Christmas Bird Counts Reports and other information available from Conservation Authorities. 	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> One or more Short-eared Owls or; One or more Bald Eagles or; At least 10 individuals and two of the listed hawk/owl species. To be significant a site must be used regularly (3 in 5 years) for a minimum of 20 days by the above number of birds. The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #10 and #11 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>

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<p>Bat Hibernacula</p> <p>Rationale: Bat hibernacula are rare habitats in all Ontario landscapes.</p>	<p>Big Brown Bat Tri-coloured Bat</p>	<p>Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)</p>	<ul style="list-style-type: none"> Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Active mine sites should not be considered as SWH The locations of bat hibernacula are relatively poorly known. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF for possible locations and contact for local experts Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern Development and Mines for location of mine shafts. Clubs that explore caves (e.g. Sierra Club) University Biology Departments with bat experts. 	<ul style="list-style-type: none"> All sites with confirmed hibernating bats are SWH. The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms Studies are to be conducted during the peak swarming period (Aug. – Sept.). Surveys should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects. SWHMiST Index #1 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>
<p>Bat Maternity Colonies</p> <p>Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.</p>	<p>Easter Small-footed Bat Little Brown Myotis Northern Myotis Tri-colored Bat</p>	<p>Maternity colonies considered SWH are found in forested Ecosites.</p> <p>All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM</p>	<ul style="list-style-type: none"> Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario. Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees. Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3 or class 1 or 2. Silver-haired Bats prefer older mixed or deciduous forest and form maternity colonies in tree cavities and small hollows. Older forest areas with at least 21 snags/ha are preferred. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF for possible locations and contact for local experts University Biology Departments with bat experts. 	<ul style="list-style-type: none"> Maternity Colonies with confirmed use by; <ul style="list-style-type: none"> >10 Big Brown Bats >5 Adult Female Silver-haired Bats The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #12 provides development effects and mitigation measures. 	<p>Trees in woodlot lack sufficient die back to provide snags for maternity roosting. A few dead snag trees present but does not meet MNR threshold of 10snags/ha.</p>

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<p>Turtle Wintering Areas</p> <p>Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Midland Painted Turtle</p> <p>Special Concern: Northern Map Turtle Snapping Turtle</p>	<p>Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO</p> <p>Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.</p>	<ul style="list-style-type: none"> For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen. Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> EIS studies carried out by Conservation Authorities. Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites. OMNRF Ecologist or Biologist Field Naturalist clubs Natural Heritage Information Center (NHIC) 	<ul style="list-style-type: none"> Presence of 5 over-wintering Midland Painted Turtles is significant. One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant. The mapped ELC ecosite area with the over wintering turtles is the SWH. If the hibernation site is within a stream or river, the deep-water pool where the turtles are over wintering is the SWH. Over wintering areas may be identified by searching for congregations (Basking Areas) of turtles on warm, sunny days during the fall (Sept. – Oct.) or spring (Mar. – May) Congregation of turtles is more common where wintering areas are limited and therefore significant SWHMiST Index #28 provides development effects and mitigation measures for turtle wintering habitat. 	<p>No suitable habitat present</p>
<p>Reptile Hibernaculum</p> <p>Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p>Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake</p> <p>Special Concern: Milksnake Eastern Ribbonsnake</p> <p>Lizard: Special Concern (Southern Shield population): Five-lined Skink</p>	<p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<ul style="list-style-type: none"> For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH. Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line. Wetlands can also be important over-wintering habitat in conifer or shrub swamps and swales, poor fens, or depressions in bedrock terrain with sparse trees or shrubs with sphagnum moss or sedge hummock ground cover. Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> In spring, local residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells). Reports and other information available from Conservation Authorities. Field Naturalists clubs University herpetologists Natural Heritage Information Center (NHIC) OMNRF ecologist or biologist may be aware of locations of wintering skinks 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) <u>Note:</u> If there are Special Concern Species present, then site is SWH <u>Note:</u> Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH. SWHMiST Index #13 provides development effects and mitigation measures for snake hibernacula. Presence of any active hibernaculum for skink is significant. SWHMiST Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat. 	<p>No old stone fences, foundations or rock crevices providing subterranean passage below frost line</p>

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<p>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</p> <p>Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Reports and other information available from Conservation Authorities. Ontario Breeding Bird Atlas Bird Studies Canada; <i>NatureCounts</i> http://www.birdscanada.org/birdmon/ Field Naturalist Clubs. 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season. A colony identified as SWH will include a 50m radius habitat area from the peripheral nests. Field surveys to observe and count swallow nests are to be completed during the breeding season. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMIST Index #4 provides development effects and mitigation measures. 	No suitable habitat present
<p>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</p> <p>Rationale: Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<ul style="list-style-type: none"> Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of the tree. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Breeding Bird Atlas, colonial nest records. Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF). Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony Aerial photographs can help identify large heronries. Reports and other information available from CAs. MNRF District Offices Local naturalist clubs 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of 5 or more active nests of Great Blue Heron or other listed species. The habitat extends from the edge of the colony and a minimum 300m radius or extent of the Forest Ecosite containing the colony or any island <15.0ha with a colony is the SWH. Confirmation of active heronries are to be achieved through site visits conducted during the nesting season (April to August) or by evidence such as the presence of fresh guano, dead young and/or eggshells. SWHMIST Index #5 provides development effects and mitigation measures. 	No suitable habitat present

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<p>Colonially -Nesting Bird Breeding Habitat (Ground)</p> <p>Rationale: Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer’s Blackbird</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer’s Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT CUS</p>	<ul style="list-style-type: none"> Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Breeding Bird Atlas, rare/colonial species records. Canadian Wildlife Service Reports and other information available from CAs. Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area MNR District Offices Field Naturalist clubs 	<p>Studies confirming:</p> <ul style="list-style-type: none"> Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer’s Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH. Studies would be done during May/June when actively nesting. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #6 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>
<p>Migratory Butterfly Stopover Areas</p> <p>Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern</u> Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM CUT CUS</p> <p><u>Forest:</u> FOC FOD FOM CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present, and will be located within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> The habitat is typically a combination of field and forest, and provides the butterflies with a location to rest prior to their long migration south. The habitat should not be disturbed, fields/meadows with an abundance of preferred nectar plants and woodland edge providing shelter are requirements for this habitat. Staging areas usually provide protection from the elements and are often spits of land or areas with the shortest distance to cross the Great Lakes. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF (NHIC) Agriculture Canada in Ottawa may have list of butterfly experts. Field Naturalist Clubs Toronto Entomologists Association Conservation Authorities 	<p>Studies confirm:</p> <ul style="list-style-type: none"> The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur. Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD. MUD of >5000 or >3000 with the presence of Painted Ladies or Red Admiral’s is to be considered significant. SWHMiST Index #16 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>

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Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Landbird Migratory Stopover Areas</p> <p>Rationale: Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds. Canadian Wildlife Service Ontario website.</p> <p>All migratory songbirds. Canadian Wildlife Service Ontario website:</p>	<p>All Ecosites associated with these ELC Community Series;</p> <p>FOC FOM FOD SWC SWM SWD</p>	<p>Woodlots need to be >10 ha in size and within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> • If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant. • Sites have a variety of habitats; forest, grassland and wetland complexes. • The largest sites are more significant. • Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> • Bird Studies Canada • Ontario Nature • Local birders and naturalist club • Ontario Important Bird Areas (IBA) Program 	<p>Studies confirm:</p> <ul style="list-style-type: none"> • Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant. • Studies should be completed during spring (Apr./May) and fall (Aug/Oct) migration using standardized assessment techniques. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. • SWHMiST Index #9 provides development effects. 	<p>No suitable habitat present</p>
<p>Deer Yarding Areas</p> <p>Rationale: Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in “yards” to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.</p>	<p>White-tailed Deer</p>	<p>Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC.</p> <p>Or these ELC Ecosites;</p> <p>CUP2 CUP3 FOD3 CUT</p>	<ul style="list-style-type: none"> • Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter. • The Core of a deer yard (Stratum I) is located within the Stratum II area and is critical for deer survival in areas where winters become severe. It is primarily composed of coniferous trees (pine, hemlock, cedar, spruce) with a canopy cover of more than 60%. • OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual”. • Woodlots with high densities of deer due to artificial feeding are not significant. 	<p>No Studies Required:</p> <ul style="list-style-type: none"> • Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths > 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH. • Deer Yards are mapped by OMNRF District offices. Locations of Core or Stratum 1 and Stratum 2 Deer yards considered significant by OMNRF will be available at local MNRF offices or via Land Information Ontario (LIO). • Field investigations that record deer tracks in winter are done to confirm use (best done from an aircraft). Preferably, this is done over a series of winters to establish the boundary of the Stratum I and Stratum II yard in an "average" winter. MNRF will complete these field investigations. • If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. • SWHMiST Index #2 provides development effects and mitigation measures. 	<p>No suitable habitat present</p> <p>No areas of conifer providing thermal cover for deer</p>

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

SEASONAL CONCENTRATIONS OF AREAS OF ANIMALS					
Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Deer Winter Congregation Areas</p> <p>Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.</p>	White-tailed Deer	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Offices LIO/NRVIS 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white-tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF. Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey. If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #2 provides development effects and mitigation measures. 	No suitable habitat present

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Cliffs and Talus Slopes</p> <p>Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO TAS TAT CLO CLS CLT</p>	<p>A Cliff is vertical to near vertical bedrock >3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris.</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> The Niagara Escarpment Commission has detailed information on location of these habitats. OMNRF District Natural Heritage Information Center (NHIC) has location information available on their website Field Naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Cliffs or Talus Slopes SWHMiST Index #21 provides development effects and mitigation measures. 	No suitable habitat present
<p>Sand Barren</p> <p>Rationale: Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites:</p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%.</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.</p>	<p>A sand barren area >0.5ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNR Districts Natural Heritage Information Center (NHIC) has location information available on their website. Field Naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> Confirm any ELC Vegetation Type for Sand Barrens Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.) SWHMiST Index #20 provides development effects and mitigation measures. 	No suitable habitat present
<p>Alvar</p> <p>Rationale: Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p>Five Alvar Species:</p> <ol style="list-style-type: none"> <i>Carex crawei</i> <i>Panicum philadelphicum</i> <i>Eleocharis compressa</i> <i>Scutellaria parvula</i> <i>Trichostema brachiatum</i> <p>These indicator species are very specific to Alvars within Ecoregion 6E.</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.</p>	<p>An Alvar site > 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Alvars of Ontario (2000), Federation of Ontario Naturalists. Ontario Nature – Conserving Great Lakes Alvars. Natural Heritage Information Center (NHIC) has location information available on their website OMNRF Districts Field Naturalist clubs Conservation Authorities 	<ul style="list-style-type: none"> Field studies that identify four of the five Alvar Indicator Species at a Candidate Alvar site is Significant. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses. SWHMiST Index #17 provides development effects and mitigation measures. 	No suitable habitat present

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
Old Growth Forest Rationale: Due to historic logging practices, extensive old growth forest is rare in the Ecoregion. Interior habitat provided by old growth forests is required by many wildlife species.	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest. <u>Information Sources</u> <ul style="list-style-type: none"> • OMNRF Forest Resource Inventory mapping • OMNRF Districts. • Field Naturalist clubs • Conservation Authorities • Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations. • Municipal forestry departments 	Field Studies will determine: <ul style="list-style-type: none"> • If dominant trees species are >140 years old, then the area containing these trees is Significant Wildlife Habitat. • The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present). • The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH. • Determine ELC vegetation types for the forest area containing the old growth characteristics. • SWHMiST Index #23 provides development effects and mitigation measures. 	No suitable habitat present
Savannah Rationale: Savannahs are extremely rare habitats in Ontario.	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities 	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #18 provides development effects and mitigation measures. 	No suitable habitat present
Tallgrass Prairie Rationale: Tallgrass Prairies are extremely rare habitats in Ontario.	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH. <u>Information Sources</u> <ul style="list-style-type: none"> • Natural Heritage Information Center (NHIC) has location information available on their website • OMNRF Districts • Field Naturalist clubs • Conservation Authorities 	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. <ul style="list-style-type: none"> • Area of the ELC Ecosite is the SWH. • Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.). • SWHMiST Index #19 provides development effects and mitigation measures. 	No suitable habitat present

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Other Rare Vegetation Communities</p> <p>Rationale: Plant communities that often contain rare species which depend on the habitat for survival.</p>	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the SWHTG. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M The OMNRF/NHIC will have up to date listing for rare vegetation communities. <u>Information Sources</u> <ul style="list-style-type: none"> Natural Heritage Information Center (NHIC) has location information available on their website OMNRF Districts Field Naturalist clubs Conservation Authorities 	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of SWHTG. <ul style="list-style-type: none"> Area of the ELC Vegetation Type polygon is the SWH. SWHMiST Index #37 provides development effects and mitigation measures. 	No suitable habitat present
SPECIALIZED HABITAT FOR WILDLIFE					
Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Waterfowl Nesting Area</p> <p>Rationale: Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to PSW	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. <ul style="list-style-type: none"> Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. <u>Information Sources</u> <ul style="list-style-type: none"> Ducks Unlimited staff may know the locations of particularly productive nesting sites. OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat. Reports and other information available from Conservation Authorities. 	Studies confirmed: <ul style="list-style-type: none"> Presence of 3 or more nesting pairs for listed species excluding Mallards, or; Presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant. Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects". A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest. SWHMiST Index #25 provides development effects and mitigation measures. 	No suitable habitat present

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</p> <p>Rationale: Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p>Osprey</p> <p>Special Concern Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree’s canopy. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario. MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat. Nature Counts, Ontario Nest Records Scheme data. OMNRF Districts Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented Reports and other information available from Conservation Authorities. Field Naturalists clubs 	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> One or more active Osprey or Bald Eagle nests in an area. Some species have more than one nest in a given area and priority is given to the primary nest with alternate nests included within the area of the SWH. For an Osprey, the active nest and a 300 m radius around the nest or the contiguous woodland stand is the SWH, maintaining undisturbed shorelines with large trees within this area is important. For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat. To be significant a site must be used annually. When found inactive, the site must be known to be inactive for > 3 years or suspected of not being used for >5 years before being considered not significant. Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid-March to mid-August. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #26 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Woodland Raptor Nesting Habitat</p> <p>Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.</p>	<p>Northern Goshawk Cooper’s Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk</p>	<p>May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3</p>	<p>All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer</p> <ul style="list-style-type: none"> Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers Hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF Districts. Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented. Check data from Bird Studies Canada. Reports and other information available from Conservation Authorities. 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more active nests from species list is considered significant. Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH. (The 28 ha habitat area would be applied where optimal habitat is irregularly shaped around the nest). Barred Owl – A 200m radius around the nest is the SWH. Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH. Sharp-Shinned Hawk – A 50m radius around the nest is the SWH. Conduct field investigations from mid-March to end of May. The use of call broadcasts can help in locating territorial. (courting/nesting) raptors and facilitate the discovery of nests by narrowing down the search area. SWHMiST Index #27 provides development effects and mitigation measures. 	<p>No stick nests observed on or adjacent to the property Proposed lots would not significantly alter habitat in the area, forest habitat abundant in area</p>
<p>Turtle Nesting Areas</p> <p>Rationale: These habitats are rare and when identified will often be the only breeding site for local populations of turtles.</p>	<p>Midland Painted Turtle <u>Special Concern Species</u> Northern Map Turtle Snapping Turtle</p>	<p>Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1</p>	<ul style="list-style-type: none"> Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle-nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels). Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them. Natural Heritage Information Center (NHIC) Field Naturalist clubs 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting Midland Painted Turtles. One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependent on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat. Field investigations should be conducted in prime nesting season typically late spring to early summer. Observational studies observing the turtles nesting is a recommended method. SWHMiST Index #28 provides development effects and mitigation measures for turtle nesting habitat. 	<p>No suitable habitat present</p>

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Seeps and Springs</p> <p>Rationale: Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p>	<p>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.</p>	<p>Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Topographical Map Thermography Hydrological surveys conducted by Conservation Authorities and MOE. Field Naturalists clubs and landowners. Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat. SWHMiST Index #30 provides development effects and mitigation measures. 	<p>No seeps/springs present on property</p>
<p>Amphibian Breeding Habitat (Woodland).</p> <p>Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations.</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>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.</p>	<ul style="list-style-type: none"> Presence of a wetland, pond or woodland pool (including vernal pools) >500m² (about 25m diameter) within or adjacent (within 120m) to a woodland (no minimum size). Some small wetlands may not be mapped and may be important breeding pools for amphibians. Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records. Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property. OMNRF District OMNRF wetland evaluations Field Naturalist clubs Canadian Wildlife Service Amphibian Road Call Survey Ontario Vernal Pool Association: http://www.ontariovernalpools.org 	<p>Studies confirm;</p> <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat. SWHMiST Index #14 provides development effects and mitigation measures. 	<p>No wetland habitat present</p>

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

RARE VEGETATION COMMUNITIES					
Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p>Amphibian Breeding Habitat (Wetlands)</p> <p>Rationale: Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	<ul style="list-style-type: none"> Wetlands >500m² (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNR mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Ontario Herpetofaunal Summary Atlas (or other similar atlases) Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count. OMNRF Districts and wetland evaluations Reports and other information available from Conservation Authorities 	Studies confirm: <ul style="list-style-type: none"> Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. The ELC ecosite wetland area and the shoreline are the SWH. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4.1 of this Schedule. SWHMiST Index #15 provides development effects and mitigation measures. 	No wetland habitat present
<p>Woodland Area-Sensitive Bird Breeding Habitat</p> <p>Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Habitats where interior forest breeding birds are breeding, typically large mature (>60 yrs old) forest stands or woodlots >30 ha. • Interior forest habitat is at least 200 m from forest edge habitat. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Local bird clubs. Canadian Wildlife Service (CWS) for the location of forest bird monitoring. Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species. Reports and other information available from Conservation Authorities. 	Studies confirm: <ul style="list-style-type: none"> Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH. Conduct field investigations in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #34 provides development effects and mitigation measures. 	Interior habitat fragmented by existing residential development adjacent to the site Interior habitat prevalent on adjacent lands

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)					
Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Marsh Breeding Bird Habitat</p> <p>Rationale: Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.</p>	<p>American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan</p> <p>Special Concern: Black Tern Yellow Rail</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1</p> <p>For Green Heron: All SW, MA and CUM1 sites.</p>	<ul style="list-style-type: none"> Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF District and wetland evaluations. Field Naturalist clubs Natural Heritage Information Center (NHIC) Records. Reports and other information available from Conservation Authorities. Ontario Breeding Bird Atlas 	<p>Studies confirm:</p> <ul style="list-style-type: none"> Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or Marsh Wren 1 pair of Sandhill Cranes; or breeding by any combination of 5 or more of the listed species. Note: any wetland with breeding of 1 or more Black Terns, Trumpeter Swan, Green Heron or Yellow Rail is SWH. Area of the ELC ecosite is the SWH. Breeding surveys should be done in May/June when these species are actively nesting in wetland habitats. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #35 provides development effects and mitigation measures. 	No suitable habitat present
<p>Open Country Bird Breeding Habitat Sources Defining Criteria</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the past 40 years based on CWS (2004) trend records.</p>	<p>Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow</p> <p>Special Concern Short-eared Owl</p>	<p>CUM1 CUM2</p>	<p>Large grassland areas (includes natural and cultural fields and meadows) >30 ha.</p> <ul style="list-style-type: none"> Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay or livestock pasturing in the last 5 years). Grassland sites considered significant should have a history of longevity, either abandoned fields, mature hayfields and pasturelands that are at least 5 years or older. The Indicator bird species are area sensitive requiring larger grassland areas than the common grassland species. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs. Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH. The area of SWH is the contiguous ELC ecosite field areas. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #32 provides development effects and mitigation measures. 	No suitable habitat present
<p>Shrub/Early Successional Bird Breeding Habitat</p> <p>Rationale: This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.</p>	<p>Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher</p> <p>Special Concern: Yellow-breasted Chat Golden-winged Warbler</p>	<p>CUT1 CUT2 CUS1 CUS2 CUW1 CUW2</p> <p>Patches of shrub ecosites can be complexed into a larger habitat for some bird species</p>	<p>Large field areas succeeding to shrub and thicket habitats >10haclxiv in size.</p> <ul style="list-style-type: none"> Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Agricultural land classification maps, Ministry of Agriculture. Local bird clubs Ontario Breeding Bird Atlas Reports and other information available from Conservation Authorities. 	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow-breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories. Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”. SWHMiST Index #33 provides development effects and mitigation measures. 	No suitable habitat present

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

HABITAT FOR SPECIES OF CONSERVATION CONCERN (NOT INCLUDING ENDANGERED OR THREATENED SPECIES)					
Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p>Terrestrial Crayfish</p> <p>Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM</p> <p>CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water. Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998. 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites. Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH. Surveys should be done April to August in temporary or permanent water. Note the presence of burrows or chimneys are often the only indicator of presence, observance or collection of individuals is very difficult. SWHMiST Index #36 provides development effects and mitigation measures. 	<p>No suitable habitat present</p>
<p>Special Concern and Rare Wildlife Species</p> <p>Rationale: These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>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.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy.</p>	<p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data. NHIC Website "Get Information" : http://nhic.mnr.gov.on.ca Ontario Breeding Bird Atlas Expert advice should be sought as many of the rare spp. have little information available about their requirements. 	<p>Studies Confirm:</p> <ul style="list-style-type: none"> Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat. SWHMiST Index #37 provides development effects and mitigation measures. 	<p>Eastern Milk Snake reported in NHIC data base as Special Concern but not listed in Ontario SAR list. Species common in Simcoe forests Habitat will remain post development</p> <p>Table 1 provides Special Concern Species assessment based on habitat present and species reported.</p>

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

ANIMAL MOVEMENT CORRIDORS					
Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite	Habitat Criteria and Information Sources	Defining Criteria	
<p>Amphibian Movement Corridors</p> <p>Rationale: Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.</p>	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. <ul style="list-style-type: none"> Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1 	Movement corridors between breeding habitat and summer habitat. <ul style="list-style-type: none"> Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2.2 (Amphibian Breeding Habitat –Wetland) of this Schedule. <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC) Reports and other information available from Conservation Authorities. Field Naturalist Clubs 	<ul style="list-style-type: none"> Field Studies must be conducted at the time of year when species are expected to be migrating or entering breeding sites. Corridors should consist of native vegetation, with several layers of vegetation. Corridors unbroken by roads, waterways or bodies, and undeveloped areas are most significant. Corridors should have at least 15m of vegetation on both sides of waterway or be up to 200m wide of woodland habitat and with gaps <20m. Shorter corridors are more significant than longer corridors, however amphibians must be able to get to and from their summer and breeding habitat. SWHMiST Index #40 provides development effects and mitigation measures. 	No suitable habitat present
<p>Deer Movement Corridors</p> <p>Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.</p>	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule. <ul style="list-style-type: none"> A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges). <p><u>Information Sources</u></p> <ul style="list-style-type: none"> MNRF District Office Natural Heritage Information Center (NHIC). Reports and other information available from Conservation Authorities. Field Naturalist Clubs 	<ul style="list-style-type: none"> Studies must be conducted at the time of year when deer are migrating or moving to and from winter concentration areas. Corridors that lead to a deer wintering habitat should be unbroken by roads and residential areas. Corridors should be at least 200m wide with gaps <20m and if following riparian area with at least 15m of vegetation on both sides of waterway. Shorter corridors are more significant than longer corridors. SWHMiST Index #39 provides development effects and mitigation measures. 	No deer yarding habitat on or adjacent to the property and hence no deer movement corridor function.

Table 2 - Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E Assessment

EXCEPTIONS FOR ECOREGION 6E						
Eco District	Wildlife Habitat and Species	Candidate			Confirmed SWH	Assessment
		Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
<p>6E-14</p> <p><u>Rationale:</u> The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast-producing tree species is important for bears.</p>	<p>Mast Producing Areas</p> <p>Black Bear</p>	<p>All Forested habitat represented by ELC Community Series:</p> <p>FOM FOD</p>	<ul style="list-style-type: none"> Black bears require forested habitat that provides cover, winter hibernation sites, and mast-producing tree species. Forested habitats need to be large enough to provide cover and protection for black bears. 	<p>Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech).</p> <p><u>Information Sources</u> Important forest habitat for black bears may be identified by OMNRF.</p>	<p>All woodlands > 30ha with a 50% composition of these ELC Vegetation Types are considered significant:</p> <p>FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5</p>	<p>Not applicable – property not on Bruce Peninsula.</p>
<p>6E- 17</p> <p><u>Rationale:</u> Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population</p>	<p>Lek</p> <p>Sharp-tailed Grouse</p>	<p>CUM CUS CUT</p>	<ul style="list-style-type: none"> The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated. 	<p>Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland.</p> <ul style="list-style-type: none"> Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting <p><u>Information Sources</u></p> <ul style="list-style-type: none"> OMNRF district office Bird watching clubs Local landowners Ontario Breeding Bird Atlas 	<p>Studies confirming lek habitat are to be completed from late March to June.</p> <ul style="list-style-type: none"> Any site confirmed with sharp-tailed grouse courtship activities is considered significant The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat SWHMiST Index #32 provides development effects and mitigation measures 	<p>Not applicable – property not on Manitoulin Island.</p>

Table 3. Significant Woodland assessment, Overhead Bridge Road, Lot 9 Concession 12, Township of Tiny

CRITERIA ¹	STANDARDS	ASSESSMENT
Woodland Size Criteria		
<ul style="list-style-type: none"> Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership) Woodland areas are considered to be generally continuous even if intersected by narrow gaps 20m or less in width between crown edges. Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions). Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types. 	<p>Where woodlands cover:</p> <ul style="list-style-type: none"> Is less than about 5% of land cover, woodlands 2ha in size or larger should be considered significant Is about 5-15% of land cover, woodlands 4ha in size or larger should be considered significant Is about 15-30% of land cover, woodlands 20ha in size or larger should be considered significant Is about 30-60% of land cover, woodlands 50ha in size or larger should be considered significant Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered 	<ul style="list-style-type: none"> Based the SSEA Township of Tiny Natural Heritage Evaluation, Table 5 Summary of 2012 Woodland Habitat Conditions – Forest Cover the average percent for cover is 60%, therefore woodlands 50ha or larger should be considered significant The subject parcel is surrounded by Concession 12E and Overhead Bridge Road which create gaps in the forest in excess of 20m between the crown edges The residential development to the west also has gaps in excess of 20m Therefore, based on size criteria forest cover of the property would not be considered part of a significant woodland in the context of the PPS
Ecological Function Criteria		
<p>Woodland Interior</p> <ul style="list-style-type: none"> Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species. For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland. 	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> Any interior habitat where woodlands cover less than about 15% of the land cover 2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover 8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover 20 ha or more of interior habitat where woodlands cover about 60% of the land cover 	<ul style="list-style-type: none"> Property contains approximately 1ha of interior habitat. Therefore, since landscape contains between 30% and 60% woodland cover woodland interior does not compel identification as significant
<p>Proximity to Other Woodlands or Other Habitats</p> <ul style="list-style-type: none"> Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not. Patches close to each other are of greater mutual benefit and value to wildlife. 	<p>Woodlands should be considered significant if:</p> <ul style="list-style-type: none"> A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance) 	<ul style="list-style-type: none"> The woodland on the subject property is located within 30m of a significant woodland as designated by the Township. However, based on the assessment of the property and the criteria for significant woodland it does not provide significant wildlife functions, lacks any unique vegetative communities and would not provide a significant ecological benefit to the designated significant woodlands to the east. There are no watercourses within 30m or surface drainage that contributes to fish habitat It appears the significant woodland designation of the subject property is based on its designation as highly vulnerable aquifer or significant groundwater recharge area.

<p>Linkages</p> <ul style="list-style-type: none"> • Linkages are important connections providing for movement between habitats. • Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats. 	<p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> • Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance) 	<ul style="list-style-type: none"> • Woodland is identified by the Township (Schedule B Natural Features, 2018) as significant woodland, but the lands to the west are not, which would indicate there is no linkage function associated with the forested residential areas to the west • The woodland is surrounded on three sides by residential development and separated from the lands to the east by Overhead Bridge Road which has a greater than 20m cleared municipal right-of-way, therefore there is no linkage function for east-west wildlife movement through the property.
<p>Water Protection</p> <ul style="list-style-type: none"> • Source water protection is important. • Natural hydrological processes should be maintained. 	<p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> • Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance) 	<ul style="list-style-type: none"> • Property does not contain ground water discharge features (i.e., seeps and springs) • The subject property, the surrounding residential development and the majority of the lands in the Township are sandy soils which have been designated as a highly vulnerable aquifer or significant groundwater recharge area in Schedule E Source Water Protection • The MNRF guidelines state if any one criterion is met the lands should be significant woodlands, however natural hydrological processes that maintain ground water resources are not unique to subject woodlands. • Based on the predominance of sandy soils the highly vulnerable aquifer or significant groundwater recharge areas are a homogenous constraint to majority of the Township and should not limit the development of the subject property.
<p>Woodland Diversity</p> <ul style="list-style-type: none"> • Certain woodland species have had major reductions in representation on the landscape and may need special consideration. • More native diversity is more valuable than less diversity. 	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> • A naturally occurring composition of native forest species that have declined significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20ha, depending on circumstance) • A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance) 	<ul style="list-style-type: none"> • Forest communities of property and adjacent lands do not have compositions of native forest tree species that have declined significantly • No terrain features such as hilltops or valley slopes • Woodland diversity does not compel identification as significant

Uncommon Characteristics Criteria

- Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected.
- Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.

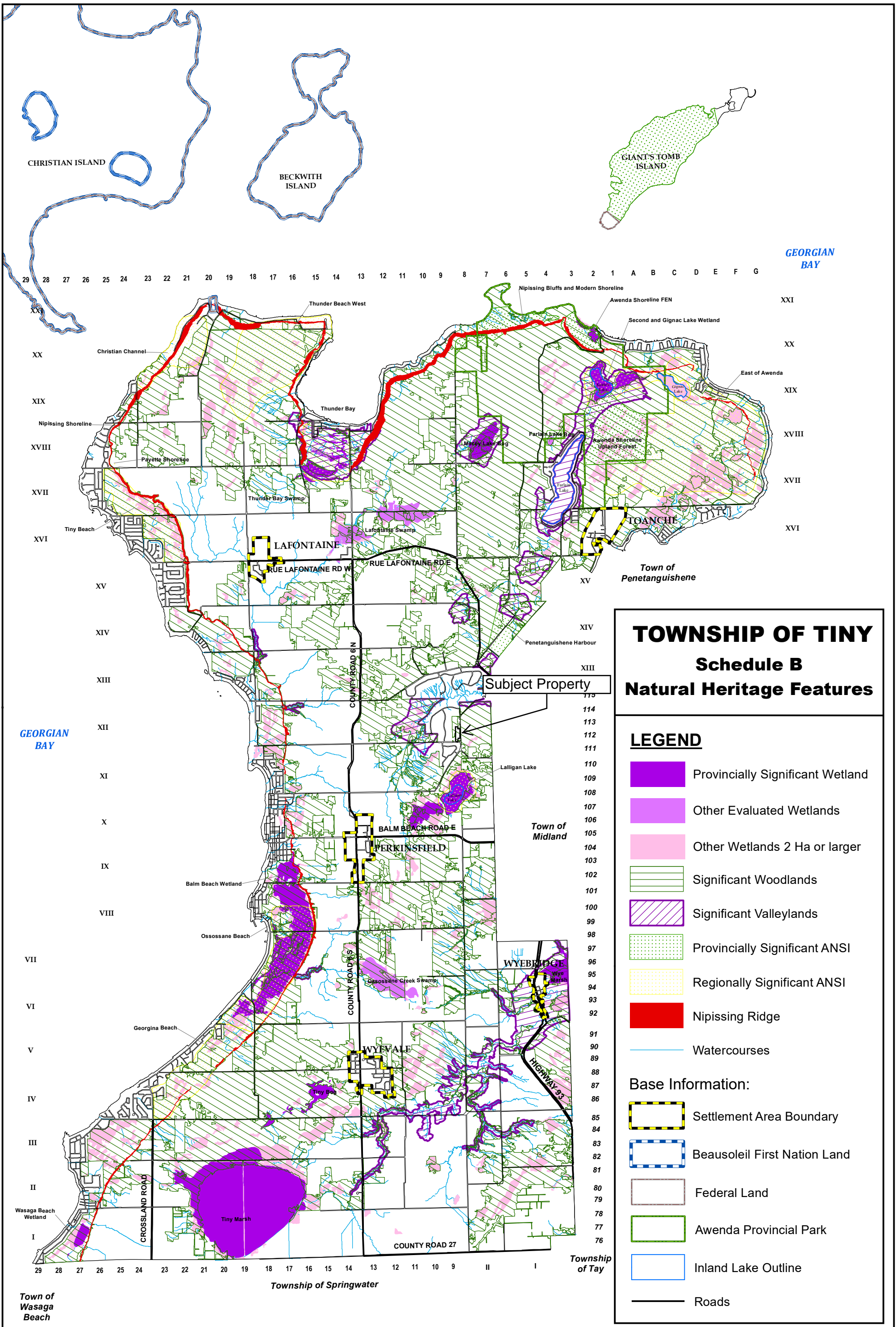
Woodlands should be considered significant if they have:

- A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, depending on circumstance)
- A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance)
- Habitat (e.g., with 10 individual stems or 100m² of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance): vascular plant species for which the NHIC's Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area
- Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10ha, depending on circumstance): older woodlands could be defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m²/ha in trees that are at least 40cm in diameter

- Forest communities of the property have compositions and structures of types common within the planning area
- None of the forest communities has characteristics of any ranked as provincially significant by the NHIC
- None of the forest communities have an abundance of rare, uncommon or restricted woodland plant species. No Butternut is on the property
- Presence of uncommon characteristics does not compel identification of the woodland cover on the property as significant

Economic and Social Function Values Criteria		
<ul style="list-style-type: none"> Woodlands that have high economic or social values through particular site characteristics or deliberate management should be protected. 	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> High productivity in terms of economically viable products together with continuous native natural attributes and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance) A high value in special services such as air-quality improvement or recreation at a sustainable level that is compatible with long-term retention and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance) Important identified appreciation, education, cultural or historical value and meet minimum area thresholds (e.g., 0.2-10ha, depending on circumstance) 	<ul style="list-style-type: none"> Forest communities of property do not generate economically viable forest products No formal recreational use of property of adjacent lands Forests not identified as providing education, cultural or historical value Economic and social values do not compel identification as significant

¹From: MNR. 2010. Natural Heritage Reference Manual for Natural Heritage Policies of the Provincial Policy Statement, 2005: Second Edition. Queen's Printer for Ontario, Toronto, ON.



TOWNSHIP OF TINY Schedule B Natural Heritage Features

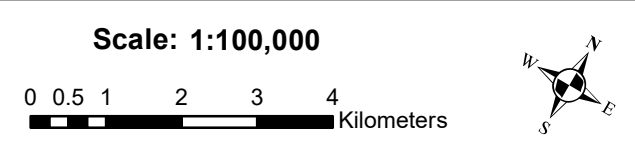
LEGEND

- Provincially Significant Wetland
- Other Evaluated Wetlands
- Other Wetlands 2 Ha or larger
- Significant Woodlands
- Significant Valleylands
- Provincially Significant ANSI
- Regionally Significant ANSI
- Nipissing Ridge
- Watercourses

Base Information:

- Settlement Area Boundary
- Beausoleil First Nation Land
- Federal Land
- Awenda Provincial Park
- Inland Lake Outline
- Roads

**PUBLIC MEETING
DRAFT #3**
Release Date: June 14, 2018

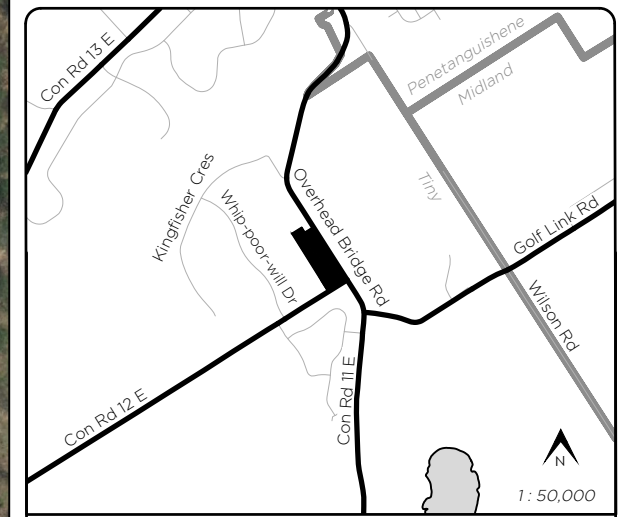


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CONCEPT PLAN

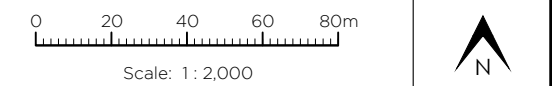
NW Corner of Overhead Bridge Rd & Concession 12 E
 Part of Lot 9 Concession 12
 Township of Tiny, County of Simcoe



LEGEND

- SUBJECT LANDS**
 Total Area: ±5.597ha (13.83ac)
- PROPOSED COUNTRY RESIDENTIAL LOTS**
 Required Lot Area: ±0.800ha (1.98ac)
 Proposed Lot Area: ±0.800ha (1.98ac)
 Required Frontage: ±45m
 Proposed Frontage: ±46.7m
- PROPOSED 5.0m LOT ADDITIONS**
- ROAD WIDENING, 0.3m RESERVE AND 15x15m DAYLIGHT TRIANGLE**

Note: This drawing is for discussion purposes only.
 Sources: Plan prepared by Raikes Geomatics Inc. dated November 26, 2020. 2018 Aerial Photo - County of Simcoe Interactive Map.



Drawn By: A.M. Date: March 18, 2021

85 Bayfield Street, Unit 300,
 Barrie, Ontario, L4M 3A7
 T: 705 797 8977
 C: 705 730 8850
 celeste@cplan.ca



Photo No. 1 - Typical forest composition middle of property. (Nov 30, 2020)



Photo No. 2 - Example of a few of the open areas and limited understory growth within the woodlot. (Nov 30, 2020)



Photo No. 3 - Example of forest cover in south half of the site. (Nov 30, 2020)



Photo No. 4 - Example of forest canopy throughout the site, lack of mature trees with cavities for bat maternity roosting. (Nov 30, 2020)