Natural Environment Report – Level 1 and 2
Walker - Redford Gravel Pit Expansion

Harold Sutherland Construction Ltd.

P/N 3581|August 7, 2025
Grey County
Municipality of West Grey
133832 Allan Park Road

SBA Skelton Brumwell & Associates Inc.
ENGINEERING PLANNING ENVIRONMENTAL CONSULTANTS

Revision History

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Revision 1			
Revision 2			
Revision 3			

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Executive Summary

This Natural Environment Report – Level 1 and 2 has been prepared on behalf of Harold Sutherland Construction Ltd., a subsidiary of Walker Aggregates, to support the proposed expansion of the Redford Pit in Hanover. Walker is preparing an application with the Ministry of Natural Resources and Forestry (MNRF) for an Aggregate Resources Act (ARA) Class A Pit Above Water licence for the proposed expansion of the existing Walker Redford Pit. The proposed expansion lands are located on north ½ of Lot 20, Concession 5 NDR, Geographic Township of Bentinck, Municipality of West Grey, County of Grey (hereafter referred to as the 'site' or 'subject property').

Skelton Brumwell & Associates Inc. has been retained to prepare this combined Level 1 and 2 Natural Heritage Report, which includes a description of the subject lands and the development proposal, analysis of the environmental planning framework, the results of background research and field investigations, and assessment of impacts, proposed mitigation, and an opinion with respect to the proposed natural heritage policy compliance of the proposed development in accordance with the relevant Provincial Standards including Aggregate Resources of Ontario Technical Reports and Information Standards, dated August 2020. The standards outline the technical requirements for various aggregate applications. This report is also intended to address provincial and municipal policy requirements with respect to the protection of natural heritage features and their functions.

The proposed pit expansion is on lands which are largely cleared and also developed with a single detached dwelling and lengthy driveway. The site therefore supports limited natural heritage features which consist of a portion of a non-significant woodland along the north property boundary and unevaluated wetlands in the eastern and south-eastern portion of the site which are located outside the proposed limits of extraction.

There are no provincially significant wetlands on or adjacent to the site. There are no significant woodlands on or adjacent to the site. There are no ANSI's on or near the site. The adjacent lands do contain natural heritage features in the form of a significant valleyland, fish habitat, and significant wildlife habitat features. These all lie outside of the proposed extraction area and are protected from development impact by a combination of buffers, berms and utilization of sediment and erosion control. The fact that proposed extraction is above the water table also ensures no impact to these features.

The woodland located on the subject and adjacent lands to the north of the proposed extraction area acts as habitat for endangered bat species. No disturbance to the woodland is proposed and appropriate buffers to the limit of extraction are also established.

An endangered Butternut tree is located along the Allen Park Road allowance. This tree is well separated from the potential extraction area and will not be impacted.

Site preparation and extraction will require some minor incidental tree removal outside the woodlands. To avoid any impact to migratory birds and roosting bats, a tree clearing window has been recommended and any tree removal which might be required outside that window is to be subject to investigation by and recommendations of an ecologist to ensure no harm to nesting birds or roosting bats.

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

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Natural Environment Report – Level 1 and 2

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1.0 Introduction

This Natural Environment Report – Level 1 and 2 has been prepared on behalf of Harold Sutherland Construction Ltd., a subsidiary of Walker Aggregates, to support the proposed expansion of the Redford Pit in Hanover. Walker is preparing an application with the Ministry of Natural Resources and Forestry (MNRF) for an Aggregate Resources Act (ARA) Class A Pit Above Water licence for the proposed expansion of the existing Walker Redford Pit. The proposed expansion lands are located on north ½ of Lot 20, Concession 5 NDR, Geographic Township of Bentinck, Municipality of West Grey, County of Grey (hereafter referred to as the 'site' or 'subject property'). The site presented in Figures 1.

Skelton Brumwell & Associates Inc. has been retained to prepare this combined Level 1 and 2 Natural Heritage Report, which includes a description of the subject lands and the development proposal, analysis of the environmental planning framework, the results of background research and field investigations, and assessment of impacts, proposed mitigation, and an opinion with respect to the proposed natural heritage policy compliance of the proposed development in accordance with the relevant Provincial Standards including Aggregate Resources of Ontario Technical Reports and Information Standards, dated August 2020. The standards outline the technical requirements for various aggregate applications. This report is also intended to address provincial and municipal policy requirements with respect to the protection of natural heritage features and their functions.

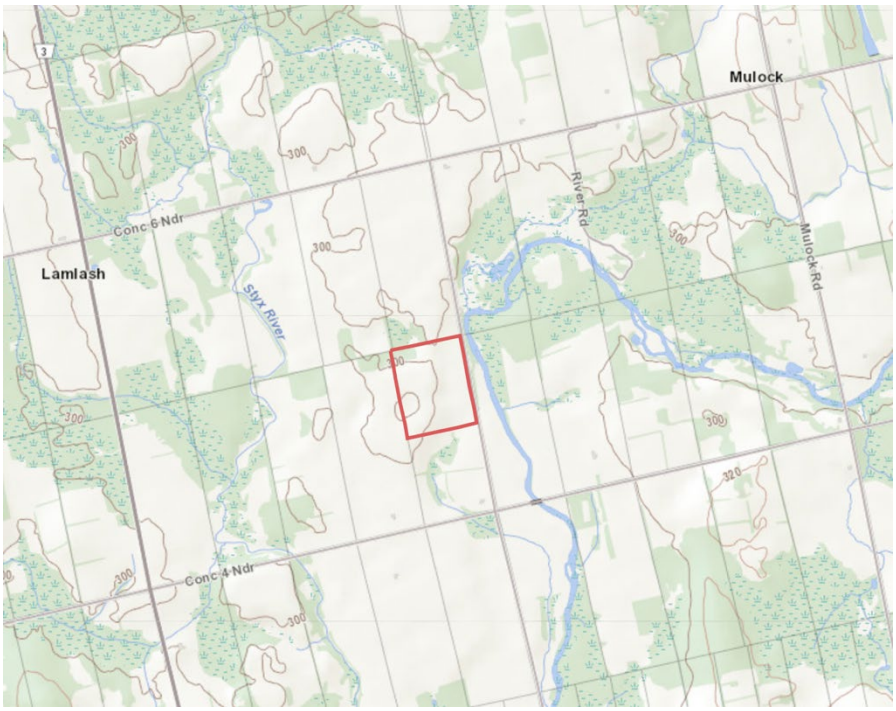

Figure 1 Location

Walker currently owns and operates the Redford Pit (license No. 624883) located on Lot 19 Concession 5, Township of Bentinck, Municipality of West Grey, County of Grey. The proposed expansion is located east of and adjacent to the current pit and consists of an approximate plan area of 20.8 hectares (ha) of which approximately 13.8 ha is proposed for extraction.

The site is primarily used for agricultural purposes with a single residential dwelling located near the central west portion the property and with a small woodland in the northwestern portion of the lot. The surrounding properties are primarily used for agricultural purposes and/or rural residential properties.

Lands to the north of the subject property are designated as Agricultural and Aggregate Resource Area in the Grey County Official Plan. Lands to the east are designated as Hazard Lands along a river. Further east the lands are designated as Agricultural and Hazard Lands. Lands to the south are designated Agricultural as well as Hazard Lands along the river. Additional Agricultural designated land is located further to the south. Lands immediately to the west of the subject property are occupied by a Class "A" licensed pit known as the "Redford Pit." Lands further west are Agricultural designated lands as well as Hazard Lands along a river. These designations reflect land uses with agricultural lands predominating to the north, south and west, across the active pit. Wooded riparian valleylands occur to the east with agricultural lands again predominating east of the valley system. The east side of Allen Park Road also has a series of rural residential situated between the road and the river valley.

The topography across the site consists of gentle hills, with lower lying areas in the southeast, central west, northwest and east. Generally, the elevation slopes to the east towards the Saugeen River located approximately 80 to 100 m east of the eastern site boundary. Elevations on site range between approximately 289 to 301 m asl. Under existing conditions, runoff from the area of the proposed expansion flows east to a roadside ditch along Allan Park Road before being conveyed to the main branch of the Saugeen River. There is a small unevaluated wetland to the south of the proposed expansion which receives a portion of the site runoff under existing conditions before being conveyed to the Saugeen River to the east. Based on the groundwater monitoring program completed on-site, the local groundwater flow direction is interpreted to be to the southeast.

The existing Walker - Redford pit has a license limit of 100,000 tonnes per year. With the expansion, it is proposed to increase the tonnage to a maximum of 300,000 tonnes per year. The expansion proposed is considering a Class A Above Water Pit, with an extractable area of 13.8 ha. The proposed pit will be an extension to the east of the existing Redford Pit. The proposed expansion will consist of a 2-phase approach. Currently one lift is being considered; however, in operation multiple lifts may be considered depending on the conditions encountered. Phase 1 will extend from the southwest corner of the site towards the northeast, extending to the center of the site. Phase 2 continues from the center of the site to the northeast extraction boundary. Extraction will remain at least 1.5 m above the maximum predicted water table as established in the hydrogeological assessment prepared by Tatham Engineering (Redford Pit Expansion Combined Level 1 and 2 Hydrogeological Assessment, July 17, 2024).

The main site access and scales will be maintained at the existing Redford Pit; however, site access from Allan Park Road will be available if required. Processing will be initially completed on the existing Redford Pit but a processing area on the expansion lands has been included in the site plans, if needed.

On-site drainage of undisturbed areas will continue as per the existing features plan and drainage of the extracted areas will be contained within the proposed extraction limits to ultimately infiltrate through the pit floor.

A berm will be constructed along the south boundary from topsoil and overburden stripped from Phase 1 lands and a berm along the east boundary will be constructed from topsoil and overburden stripped from the Phase 2 lands. Once the berms are established, topsoil and overburden shall be used for progressive rehabilitation or if areas are not available for rehabilitation topsoil will be temporary stockpiled. No topsoil will be removed from the site.

A water balance was completed for the site to establish a reasonable estimate of the current infiltration rates at the site compared to the future infiltration rates for the proposed aggregate pit (i.e., existing, extraction and rehabilitation conditions).

Since the pit operations will generally not decrease the amount of pervious land use, the pre and post extraction pervious land use space remains the same. Further the slope during the extraction and rehabilitation phases will likely be engineered to be gentle to flat slopes compared to the rolling land observed in the existing phase. As such, the infiltration factor during the extraction and rehabilitation phases will be increased in comparison to the existing phase as a result of the anticipated flattening of the grades on-site.

The rehabilitation condition will remain similar to the extraction phase. Topsoil stockpiled in berms during extraction will be used to establish 3:1 slopes towards the base of the pit floor. As such, infiltration will remain similar to the extraction phase, as incidental waters will drain towards the lower lying pit floor. It is anticipated infiltration will increase on-site during the aggregate operations and after rehabilitation, and runoff will decrease

Trucks hauling material from the expanded pit area will use the existing access from Concession Road 4. Most of the product produced by the pit will be hauled west along Concession Road 4 to Grey Road 3, and the north or south on County Road 3 as needed.

The proposed final rehabilitation plan for the site is to be returned to agricultural lands.

The proposal requires an amendment to the Municipality of West Grey's Zoning By-law, and an application under the Aggregate Resources Act (ARA) for a Class A, Category 3 gravel pit.

2.0 Policy Context

The lands are governed by the Official Plan of the County of Grey. The Municipality of West Grey Official Plan only applies to the settlement areas of Durham and Neustadt. Lands outside of these settlement areas are not subject to the local Official Plan and are governed by the Grey County Official Plan.

The majority of the subject property is designated "Agricultural" and a small portion of the subject property is also designated "Hazard Lands" on Schedule A of the Grey County Official Plan. The subject property is also designated as "Aggregate Resource Area" on Schedule B of the Grey County Official Plan. Additionally, Appendix B of the Grey County Official Plan maps constraints and the northeast corner of the subject property has been identified as Significant Valleylands (applying to the lands that have been designated as "Hazard Lands"). There are also wetlands located in proximity to the subject property to the south.

Within lands designated as "Agricultural", sand and/or gravel operations proposed within "Aggregate Resource Areas" on Schedule B are permitted (5.2.1.1.h) and as such the subject property will remain Agricultural but may be permitted extraction uses as an interim use.

The northeast lands have been designated as "Hazard Lands" due to the presence of Significant Valleylands as well as wetlands.

The site is located within the Municipality of West Grey Zoning By–law No. 37–2006 and is zoned "Agricultural Zone (A1)" and "Natural Environment Zone (NE)". A Zoning By–law Amendment will be required to rezone the subject lands from Agricultural (A) to Extractive Industrial Zone (M4).

The need for a Natural Environment Report (Level 1 and 2) arises from the presence of significant valleylands, wetlands and other potential natural heritage features on and adjacent to the subject lands.

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

In accordance with the Provincial Planning Statement (2024), development and site alteration are not permitted in significant wetlands. Development impacting the habitat of endangered and threatened species or in fish habitat is not permitted except in accordance with applicable provincial or federal requirements. Under the applicable policies of the Provincial Policy Statement, development and site alteration are permitted in other natural heritage features and adjacent to all natural heritage features where it has been demonstrated that there will be no negative impacts on natural features or ecological functions for which the area is identified. Therefore, where such features are located on the site or adjacent lands, further study is required to determine the potential impacts as well as outline mitigation measures to ensure that no loss of significant features or functions occurs.

The Provincial Planning Statement indicates that the diversity of natural features in an area, the natural connections between them, ecological function of the area, and the biodiversity of the area should be maintained or restored, and improved, where possible recognizing linkages between and among natural heritage features and areas, surface water features and ground water features.

Therefore, although the Provincial policies establish a requirement to protect natural features and functions, it is not intended that development of the nature proposed be prohibited. Development may occur under an approved environmental impact study.

The following sections of this report are intended to address the natural heritage policy requirements of the Province and municipalities.

The assessment approach involves determining, through an investigation of existing information data bases and the observation and analysis of site conditions, whether or not significant, or key, natural heritage features or functions occur on the development area or adjacent lands; whether or not the proposed development would detrimentally impact those features or functions; and, what measures are required, if any, to avoid impact to significant features and functions.

While this report is entitled Natural Environment Report – Level 1 and 2, the information provided as well as analysis, recommendations and conclusions are equivalent to an environmental impact study and the report is also intended to serve this function in relation to provincial and municipal policy consistency and conformity.

3.0 Background Information

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

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

- Ministry of Natural Resources and Forestry (MNRF) Natural Heritage Information Centre (NHIC) data bases and mapping;
- Grey County Official Plan;
- Ontario Nature Reptile & Amphibian Atlas;
- Toronto Entomolgist's Association Butterfly Atlas;
- Aquatic Species at Risk Maps - Ontario (Fisheries and Oceans Canada);
- Aquatic Resource Area Summary Data (Government of Ontario);
- Ontario Reptile and Amphibian Atlas (Ontario Nature);
- Ontario Breeding Birds Atlas (Bird Studies Canada); and,
- iNaturalist and eBird mapping.

4.0 Field Investigations

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

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

Survey	Staff Initials*	Date	Start Time	Temperature	Cloud Cover	Precipitation	Wind (Beaufort Wind Scale)
Initial Field Survey	TMW/MJW	February 16, 2023	9:00am	2	100%	None	0
Amphibian Breeding Survey 1	TMW	April 12, 2023	8:45pm	22	0%	None	1-2
Breeding Bird Survey	TMW	May 18, 2023	7:00am	12	0%	None	0
Spring Vascular Plant Survey	TMW	May 18, 2023	10:00am	12	0%	None	0
Amphibian Breeding Survey 2	TMW	May 21, 2023	9:00pm	14	10%	None	0
Amphibian Breeding Survey 3	TMW	June 13, 2023	9:30pm	15	10%	None	2

Amphibian Breeding Survey 4	TMW	June 20, 2023	9:40pm	24	0%	None	0
Bat Recorder Setup	TMW	June 20, 2023	9:00pm	24	0%	None	0
Breeding Bird Survey 2	TMW	July 7, 2023	7:30am	22	0%	None	1-2
Bat Recorder Pickup	TMW	July 7, 2023	10:30am	22	0%	None	1-2
Breeding Bird Survey 3	TMW	July 12, 2023	7:00am	19	95%	None	0-1
Ecological Land Classification	TMW/MJW	September 6, 2023	10:30am	28	0%	None	1-2
Breeding Bird Survey 4	TMW	June 24, 2025	6:30am	25	0%	None	0-1
Breeding Bird Survey 5	TMW	July 11, 2025	7:00am	20	15%	None	0

*Primary reporting staff are listed. Additional support staff or sub-consultants may have assisted in one or more site visits

4.1 Vegetation and Ecological Land Classification

4.1.1 Methodology

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

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

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

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

4.1.2 Data

There were 106 plant species identified within property. In regard to native species, the majority are considered secure (uncommon but not rare) or apparently secure (common, widespread and abundant) species in the Province. One species found on adjacent lands within the road allowance, Butternut (*Juglans cinera*), is currently listed as endangered, and considered imperiled, within the

Province. Another species, Ohio Buckeye (*Aesculus glabra*), is considered critically imperilled in the Province because of extreme rarity. In Ontario, Ohio Buckeye has only been found growing naturally in one area in Southwestern Ontario near Lake St. Clair. Ohio buckeye is occasionally planted as an ornamental tree, as in this case, with the observed specimen being a planted tree along the driveway to the residential structure.

A list of vascular plants and their status in Ontario is included is set out within Appendix A.

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

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

Subject Property:

CUM1-1 Dry – Moist Old Field Meadow Type

This community is dominated by a variety of short grass (*Poaceae*) species but has a very high forb ratio. Associate species include Wild Carrot (*Daucus carota*), Spotted Knapweed (*Centaurea stoebe*), Common Milkweed (*Asclepias syriaca*), Common Burdock (*Arctium minus*), Common Yarrow (*Achillea millefolium),* Cow Vetch (*Vicia cracca*), White Heath Aster (*Symphyotrichum ericoides var. ericoides*), Cypress Spurge (*Euphorbia cyparissias*), Red Raspberry (*Rubus idaeus*) and Canada Anemone (*Anemonastrum canadense*) among many others. A small number of scattered tree species are also present within this feature including Sugar Maple (*Acer saccharum*), Hawthorn (*Cratageous Sp*) and Balsam Poplar (*Populus balsamifera*).

FOD5-8 Dry – Fresh Sugar Maple – White Ash Deciduous Forest Type

This community is dominated by Sugar Maple (*Acer saccharum*) and White Ash (*Fraxinus americana*). Associate species include Black Cherry (*Prunus serotina*), White Elm *(Ulmus americana*), American Basswood (*Tilia americana*) and Green Ash (*Fraxinus pennsylvanica*). Ground cover included Alternate-leaved Dogwood (*Cornus alternifolia*), Prickly Gooseberry (*Ribes cynosbati*), Wild Grape (*Vitis riparia*), Thicket Creeper (*Parthenocissus vitacea*), Wild Sarsaparilla (*Aralia nudicaulis*) and Hairy Solomons Seal (*Polygonatum pubescens*).

SWT2-2 – Willow Mineral Thicket Swamp Type

This community is dominated by a variety of Willow species including Slender Willow (*Salix petiolaris*), Bebb's Willow (*Salix bebbiana*) and Pussy Willow (*Salix discolor*). Tree species present included Crack Willow (*Salix euxina*), Balsam Poplar (*Populus balsamifera*), White Elm (*Ulmus americana*) and American Basswood (*Tilia americana*). Other ground species included Wild Grape (*Vitis riparia*), Jewelweed (*Impatiens capensis*) Red Osier Dogwood (*Cornus sericea*), Sensitive Fern (*Onoclea sensibilis*) and Spotted Joe-pye Weed (*Eutrochium maculatum*). This ecotype also includes a very small man-made pond feature (0.28 acres).

FOD3-1 – Dry – Fresh Poplar Deciduous Forest Type

This community is dominated by Balsam Poplar (*Populus balsamifera*), Manitoba Maple (*Acer negundo*) and White Elm (*Ulmus americana*). Associate species included Hawthorn (*Cratageous Sp*) and Apple (*Malus pumila*). Ground cover consisted primarily of meadow species including Wild Carrot (*Daucus carota*), Spotted Knapweed (*Centaurea stoebe*), Red Clover (*Trifolium pratense*), White Clover (*Trifolium repens*) and Cow Vetch (*Vicia cracca*). This ecotype also includes a very small man-made pond feature (0.05 acers) which is surrounded by grass species (*Poaceae*).

Clearing, Dwelling & Driveway

This area is dominated by lawn grass species (*Poaceae*). Common meadow species including Wild Carrot (*Daucus carota*), Old-field Cinqfoil (*Potentilla simplex*), Ox-eye Daisy (*Leucanthemum vulgare*), Cow Vetch (*Vicia cracca*), Common Mullein (*Verbascum thapsus ssp. thapsus*) are also present in portions of this area. Specimen tree species within this area included Sugar Maple (*Acer saccharum*), Black Walnut (*Juglans nigra*), White Spruce (*Picea glauca*), Red Pine (*Pinus resinosa*) and Eastern White Pine (*Pinus strobus*).

Hedgerows

The hedgerows along the western, southern and portions of the eastern boundary have a variety of tree species including Sugar Maple (*Acer saccharum*), White Elm (*Ulmus americana*), American Basswood (*Tilia americana*), Hawthorn (*Cratageous Sp*), Balsam Poplar (*Populus balsamifera*), Manitoba Maple (*Acer negundo*) and White Ash (*Fraxinus americana*). Ground species are primarily meadow species including New England Aster (*Symphyotrichum novae-angliae*), Cow Vetch (*Vicia cracca*), Poison Ivy (*Toxicodendron radicans*), Wild Grape (*Vitis riparia*), Wild Carrot (*Daucus carota*) and Virginia Creeper (*Parthenocissus quinquefolia*). These were not mapped due to their very small size and inconstance along the property boundaries.

Adjacent Lands:

SWT3-2 - Willow Organic Thicket Swamp Type

This community is directly north of the subject property and is dominated by a variety of Willow species including Slender Willow (*Salix petiolaris*) and Bebb's Willow (Salix bebbiana) as well as Silky Dogwood (*Cornus obliqua*). Associates tree species include Red Maple (*Acer rubrum*), White Elm (*Ulmus americana*), Silver Maple (*Acer saccharinum*), American Basswood (*Tilia americana*). Ground cover consisted of Red Osier Dogwood (*Cornus sericea*), Swamp Milkweed (*Asclepias incarnata*), False Nettle (*Boehmeria cylindrica*), Hop Sedge (*Carex lupulina*), Jewelweed (*Impatiens capensis)* and Sensitive Fern (*Onoclea sensibilis*). This wetland feature is approximately (0.9 acres in size).

SWD

This community is directly south of the subject property and is believed to be Deciduous Swamp habitat. Aerial photos show water within this feature and amphibians were heard calling within it during the 2023 surveys. A pervious report from 2006 for adjacent lands to the south west which is owned by the client also stated that wetland is present within this feature and a small intermittent watercourse flows south of this feature into the Saugeen River. This feature is approximately 6.7 to 12.7 acres in size, due to this been private property full wetland evaluation and size could not be established.

FOD

This community is directly north of the subject property. This is believed to be an extension of the Sugar Maple - White Ash dominate forest to its south but without access to this area it was determined to leave it as FOD.

FOC4

This community is located Northeast across the road from the subject property. This is a dense Eastern White Cedar woodland along the edge of the Saugeen River.

CUP

This community is located southeast of the subject property across the road. This is plantation assumed to be use for harvesting of ornamental seasonal trees.

CUP3-1

This is a Red Pine Plantation located directly east of the subject property across the road. This is a narrow plantation situated between the road and the Saugeen River and the mixed woodland riparian corridor.

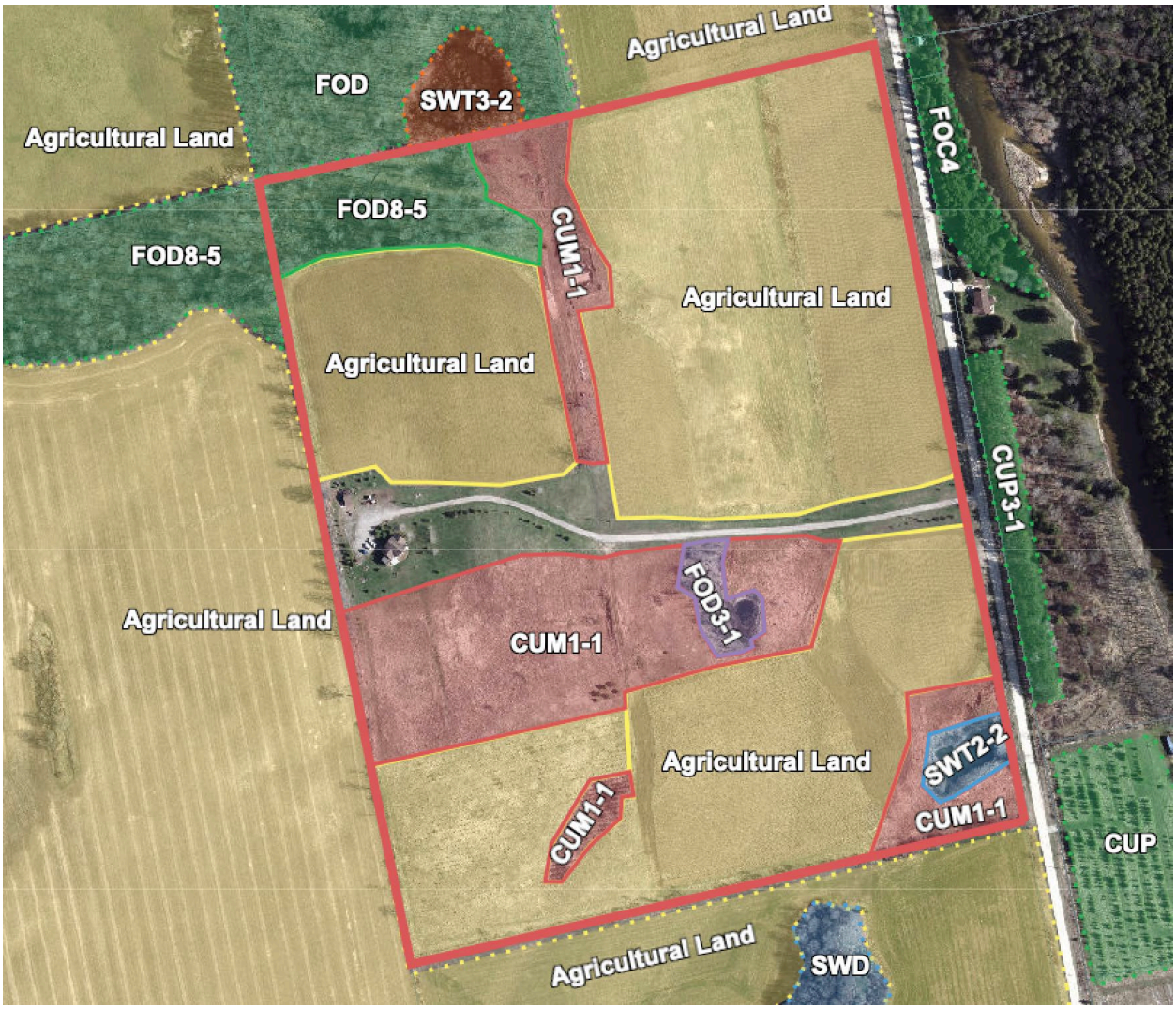

Figure 2 ELC

4.2 Birds

4.2.1 Methodology

Five (5) breeding bird surveys were conducted on the property during the 2023 and 2025 field season. To complete these surveys, a mix of point counts and wandering transects were utilized across the property. Point counts were conducted in each area for a period of ten (10) minutes. The wandering transects occurred throughout the property. All surveys took place between 5:00 AM and

10:00 AM as protocol dictates. Incidental observations were also made for birds during field investigations through observations of direct sightings and physical evidence (nesting, cavities).

Stick nest surveys were conducted on the entire subject property during the February 16, 2023 survey. This stick nest survey resulted in one nest observation. This nest was observed on a neighboring property to the north within the woodlands. Binocular surveys were conducted during every single ecological site visit on the property and these investigations found that no birds were occupying the nest. The nest was also observed to be damaged during the summer of 2023 with damage believed to be caused by one or more summer storm events.

The Breeding Bird Atlas was reviewed for records of species observations for square 17TNJ09 which covers the entire site and surrounding lands.

Both iNaturlist and eBird data were reviewed relative to determination of the potential presence of species at risk as well as those species relevant to Significant Wildlife Habitat within 250m of the site. The iNaturalist data was also reviewed relative to documented occurrence of bird species.

4.2.2 Data

There were 43 bird species identified within the study area. A list of these species is set out within the Appendix A. In regard to native species, all birds are considered secure (uncommon but not rare) or apparently secure (common, widespread and abundant) species in this part of the Province. The observed species include two (2) threatened species: Eastern Meadowlark (*Sturnella magna*) and Bank Swallow (*Riparia riparia*). The observations also include two (2) species of Special Concern: Eastern Wood-pewee (*Contopus virens*) and Grasshopper Sparrow (*Ammodramus savannarum*).

Breeding Bird Atlas Square has records of the following species: Alder Flycatcher (*Empidonax alnorum*), American Crow (*Corvus brachyrhynchos*), American Goldfinch (*Spinus tristis*), American Kestrel (*Falco sparverius*), American Redstart (*Setophaga ruticilla*), American Robin (*Turdus migratorius*), American Woodcock (*Scolopax minor*), Baltimore Oriole (*Icterus galbula*), Bank Swallow (*Riparia riparia*), Barn Swallow (*Hirundo rustica*), Belted Kingfisher (*Megaceryle alcyon*), Black-and-white Warbler(*Mniotilta varia*), Black-capped Chickadee (*Poecile atricapillus*), Black-throated Green Warbler (*Setophaga virens*), Blue Jay (*Cyanocitta cristata*), Blue-winged Warbler (*Vermivora cyanoptera*), Bobolink (*Dolichonyx oryzivorus*), Brown Thrasher (*Toxostoma rufum*), Brown-headed Cowbird (*Molothrus ater*), Canada Goose (*Branta canadensis*), Cedar Waxwing (*Bombycilla cedrorum*), Chestnut-sided Warbler (*Setophaga pensylvanica*), Chipping Sparrow(*Spizella passerina*), Common Grackle (*Quiscalus quiscula*), Common Raven (*Corvus corax*), Common Yellowthroat(*Geothlypis trichas*), Eastern Bluebird (*Sialia sialis*), Eastern Kingbird (*Tyrannus tyrannus*), Eastern Meadowlark(*Sturnella magna*), Eastern Phoebe (*Sayornis phoebe*), Eastern Screech-Owl (*Megascops asio*), Eastern Towhee(*Pipilo erythrophthalmus*), Eastern Wood-Pewee (*Contopus virens*), European Starling (*Sturnus vulgaris*), Field Sparrow (*Spizella pusilla*), Grasshopper Sparrow (*Ammodramus savannarum*), Gray Catbird (*Dumetella carolinensis*), Great Blue Heron (*Ardea herodias*), Great Crested Flycatcher (*Myiarchus crinitus*), Green Heron(*Butorides virescens*), Hairy Woodpecker (*Picoides villosus*), House Sparrow (*Passer domesticus*), Indigo Bunting(*Passerina cyanea*), Killdeer (*Charadrius vociferus*), Mallard (*Anas platyrhynchos*), Mourning Dove (*Zenaida macroura*), Nashville Warbler (*Leiothlypis ruficapilla*), Northern Cardinal (*Cardinalis cardinalis*), Northern Flicker(*Colaptes auratus*), Northern House Wren (*Troglodytes aedon*), Northern Rough-winged Swallow (*Stelgidopteryx serripennis*), Northern Waterthrush (*Parkesia noveboracensis*), Osprey (*Pandion haliaetus*), Ovenbird (*Seiurus aurocapilla*), Pied-billed Grebe (*Podilymbus podiceps*), Pileated Woodpecker (*Dryocopus pileatus*), Pine Warbler(*Setophaga pinus*), Red-bellied Woodpecker (*Melanerpes carolinus*), Red-breasted Nuthatch (*Sitta canadensis*), Red-eyed Vireo (*Vireo olivaceus*), Red-tailed Hawk (*Buteo jamaicensis*), Red-winged

Blackbird (*Agelaius phoeniceus*), Rock Pigeon (*Columba livia*), Rose-breasted Grosbeak (*Pheucticus ludovicianus*), Ruffed Grouse (*Bonasa umbellus*), Sandhill Crane (*Grus canadensis*), Savannah Sparrow (*Passerculus sandwichensis*), Scarlet Tanager (*Piranga olivacea*), Sharp-shinned Hawk (*Accipiter striatus*), Song Sparrow (*Melospiza melodia*), Swamp Sparrow (*Melospiza georgiana*), Tree Swallow (*Tachycineta bicolor*), Turkey Vulture (*Cathartes aura*), Veery (*Catharus fuscescens*), Warbling Vireo (*Vireo gilvus*), White-breasted Nuthatch (*Sitta carolinensis*), White-throated Sparrow (*Zonotrichia albicollis*), Wild Turkey (*Meleagris gallopavo*), Wilson's Snipe (*Gallinago delicata*), Winter Wren (*Troglodytes hiemalis*), Yellow Warbler (*Setophaga petechia*), Yellow-bellied Sapsucker (*Sphyrapicus varius*), and Yellow-rumped Warbler (*Setophaga coronata*).

Of these the following are SAR species: Bank Swallow (*Riparia riparia*) (Threatened), Barn Swallow (*Hirundo rustica*) (Special Concern), Bobolink (*Dolichonyx oryzivorus) (Threatened),* Eastern Meadowlark (*Sturnella magna*) (Threatened), Eastern Wood-Pewee (*Contopus virens*) (Special Concern), and Grasshopper Sparrow (*Ammodramus savannarum*) (Special Concern).

A review of eBird data and iNaturalist data indicated no recorded observations of SAR bird species on the site or on adjacent lands or within 250m of the subject lands.

4.3 Reptiles and Amphibians

4.3.1 Methodology

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

During all surveys on the subject property searches were made for potential vernal pools which could support breeding amphibian species.

Two small wetlands were observed on the property, one within the middle of the subject property which is believed to be anthropogenic and a second in the southeastern corner which also appears to be anthropogenic in origin and drains east through a culvert under Allan Park Road and into the Saugeen River. There is a wetland immediately adjacent to the northern property boundary within woodlands and there is also another wetland south of the subject property.

Four (4) amphibian breeding surveys were conducted on the subject property in accordance with the applicable protocol. One additional survey was completed due to unusually cold weather conditions during the third survey.

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

The Ontario Reptile and Amphibian Atlas was reviewed for species listings for square 17NJ09.

4.3.2 Data

Field investigation found suitable amphibian breeding habitat in all four previously mentioned wetlands on and off the subject property (monitoring locations shown in Figure 3). All amphibian data is set out in Appendix. A summary of the highest call level results recorded at the four (4) locations is set out in the following table. Location 1 is an monitoring point on the property observing calls in the wetland to the north of the property. Location 2 and 3 are in small wetlands on the property. Location 4 is an observation point on the road observing calls in a wetland situated to the south of the property.

Location 1		
Scientific Name	**Common Name**	**Highest Call Level**
Pseudacris crucifer	Spring Peeper	3
Lithobates sylvaticus	Wood Frog	3
Dryophytes versicolor	Gray Tree Frog	3
Lithobates clamitans	Green Frog	3
Location 2		
Scientific Name	**Common Name**	**Highest Call Level**
Pseudacris crucifer	Spring Peeper	3
Lithobates sylvaticus	Wood Frog	1
Dryophytes versicolor	Gray Tree Frog	2
Location 3		
Scientific Name	**Common Name**	**Highest Call Level**
Pseudacris crucifer	Spring Peeper	3
Lithobates sylvaticus	Wood Frog	1
Dryophytes versicolor	Gray Tree Frog	1
Lithobates clamitans	Green Frog	3
Location 4		
Scientific Name	**Common Name**	**Highest Call Level**
Pseudacris crucifer	Spring Peeper	3
Lithobates sylvaticus	Wood Frog	3
Dryophytes versicolor	Gray Tree Frog	3

Figure 3 Amphibian Monitoring Locations

After data analysis it was determined that Location 1 and Location 4 should both be considered significant wildlife habitat as three different species had a call level of 3. Both these locations are outside of the property boundary. The two locations within the property boundary did not reach call levels to constitute significant wildlife habitat and this is anticipated given their small size and characteristics.

No incidental reptile and amphibian observations were documented on the property or on neighboring lands.

NHIC squares 17NJ0495 and 17NJ0494 documented a record of Midland Painted Turtle (*Chrysemys picta marginata*) and Eastern Ribbon Snake (*Thamnophis saurita*). Eastern Ribbon Snakes are currently listed as Special Concern within the Province. Neither species was identified on the subject property during field investigations.

Reptile and Amphibian Atlas Square 17NJ09 contained the following observations: Midland Painted Turtle (*Chrysemys picta*), Snapping Turtle (*Chelydra serpentina*) , Eastern Garter Snake (*Thamnophis sirtalis sirtalis*), Eastern Milksnake (*Lampropeltis triangulum*), Northern Ribbonsnake (*Thamnophis sauritus septentrionalis)*, Northern Watersnake (*Nerodia sipedon sipedon*), Smooth Greensnake

(Opheodrys vernalis), American Bullfrog (Lithobates catesbeianus), Gray Treefrog (*Hyla versicolor*), Green Frog (*Lithobates clamitans*), Mink Frog (*Lithobates septentrionalis*), Northern Leopard Frog (*Lithobates pipiens*), Pickerel Frog (*Lithobates palustrisis*), Spring Peeper (*Pseudacris crucifer*), Wood Frog (*Lithobates sylvaticus*), American Toad (*Anaxyrus americanus*), Eastern Red-backed Salamander (*Plethodon cinereus*), Mudpuppy (Necturus maculosus), and Red-spotted Newt (Notophthalmus viridescens viridescens). Snapping Turtles are current listed as Special Concern within the Province. This species was not identified on the property during field investigations.

A review of iNaturalist data indicated that no observations of reptile or amphibian species were recorded on the subject or adjacent lands (250m). However, a Snapping Turtle observation was noted in iNaturalist to the south-east of the site in the Saugeen River in May of 2024.

4.4 Mammals

4.4.1 Methodology

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

A modified bat snag/roost survey was completed on the property. Because of the potential for bat species to be using this portion of the property three (3) acoustic bat monitors were set throughout the property from June 20, 2023 to July 7, 2023 (figure 4). The bat monitors were set up for a total of 17 nights on the subject property.

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

Figure 4 Acoustic Bat Monitor Locations

4.4.2 Data

Ten (10) mammals were observed on the property. A list of these species can be found within Appendix A. Six of these observations relate to bats of which 5 of these are listed as Endangered. The other observed species are not SAR.

The bat snag/roost survey documented multiple potential bat snag and roost habitats within the northern portion of the subject property where significant tree cover was present. No bat snag or roost trees were observed anywhere else on the subject property

Monitoring results are set out in the following table.

Bat Recording Data			Number of Calls		
Scientific Name	**Common Name**	**Status**	**Location 1**	**Location 2**	**Location 3**
Myotis lucifugus	Little Brown Myotis	Endangered	11	8	2
Perimyotis subflavus	Tri-coloured Bat	Endangered	1	0	0
Lasiurus borealis	Eastern Red Bat	Endangered	1	0	0
Eptesicus fuscus	Big Brown Bat	No Status	575	148	395
Lasionycteris noctivagans	Silver Haired Bat	Endangered	26	23	47
Lasiurus cinereus	Hoary Bat	Endangered	47	18	62

Analysis completed on the results of monitoring indicated that there is habitat utilization for six of the eight bat species on the subject property, although two species were identified only on the basis of a single observation.

Other than the Big Brown Bat, which is one of the most common species within the Province, the calls of most species were very limited considering the duration of the time of recording. It is believed that the majority of those recordings are associated with feeding over the wetlands and agricultural lands on the property by single individuals or a small number of bats. Our experience suggests that when larger woodlands with high numbers of potential roosts are present, significantly more calls would be identified during the lengthy recording period.

Based on the recordings it is likely that roosting occurs within the woodlands on the subject property and adjacent lands.

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

4.5 Other Terrestrial Fauna

4.5.1 Methodology

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

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

4.5.2 Data

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

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

4.6 Fish

4.6.1 Methodology

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

Resources consulted included the Ontario GeoHub aquatic resource area database as well as iNaturalist.

No fish sampling was conducted on the site due to the nature of the features. Observations of fish species present were made on the basis of visual observation.

No fish sampling was conducted outside the limits of the property as data base information was sufficient to determine the presence and nature of fish habitat present on adjacent lands.

4.6.2 Data

A review of the aquatic resource area database indicates that the Saugeen River to the east of the site is a cold water regime watercourse with fish species present including Brook Trout, Brown Trout, Northern Brook Lamprey, Northern Pike, Perches, Pumpkinseed, Rainbow Trout, Rock Bass, Smallmouth Bass, and Suckers.

A review of iNaturalist observations indicates no observations of fish species on the subject lands or adjacent lands or within 250m of the subject property.

No watercourses were observed on the property.

A report that was completed in 2006 on a neighboring site by the same client documented seasonal watercourse that originates from the wetland complex south of the subject lands. This seasonal watercourse runs southeast beneath Concession 4 and Allan Park Road into the Saugeen River. This watercourse does not originate on or enter the subject property.

No fish were observed in the wetland within the middle of the subject property. Multiple fish were observed in the wetland within the southeastern portion of the property during every survey. Based on characteristics of this shallow surface water feature, this is considered to be a warm water fish habitat feature.

Two small wetlands were observed north and south of the property boundaries but were unable to be directly investigated. Based on the nature of the features, these are assumed to have the potential to provide warm water fish habitat.

The Saugeen River is located approximately 40m east of the subject property across Allan Park Road and the Styx River which is large tributary of the Saugeen is located 600m west of the property boundary.

NHIC squares 17NJ0495 and 17NJ0494 documented a record of Northern Brook Lamprey (*Ichthyomyzon fossor*) in the area.

5.0 Natural Heritage Features Identification, Analysis of Impacts and Recommendations

5.1 Wetlands

Figure 5 Wetland Locations

Ministry of Natural Resources mapping indicates an unevaluated wetlands situated north, east and south of the property.

Wetlands to the east of the property associated with the Saugueen River are well separated from the proposed limit of extraction and the proposal is not on lands adjacent to these wetlands.

However, a total of four (4) wetlands were identified during field surveys (Figure 5) which are either on lands adjacent to the subject property or on the property.

Wetland (1) as identified in Figure 5 is categorized as SWT3-2 - Willow Organic Thicket Swamp Type. This feature is just north of the subject property and is approximately 0.36ha (0.9 acres) in size. This feature had no open water during surveys conducted in July and September.

Wetland (2) as identified in Figure 5 is a very small man-made pond feature within some woodlands at the bottom of the slope. No fish were observed within this feature and water levels decreased significantly over the spring and summer season. This wetland feature is approximately 0.02ha (0.05acres) in size. This feature is purposed to have a 10m no disturbance buffer.

Wetland (3) as identified in Figure 5 is categorized as SWT2-2 - Willow Mineral Thicket Swamp Type, although this categorization is primarily for the area surrounding the small pond feature which includes open surface water. This pond feature decreased in size dramatically during the spring and summer season. Fish were however observed within the feature during the entire survey season. This wetland feature is approximately 0.11ha (0.28 acres) in size. This feature is proposed to have an 105m no disturbance buffer.

Wetland (4) as identified in Figure 5 is located south of the subject property. Based on remote observation it is characterized as SWD, deciduous swamp. This feature had amphibians present as observed during calling surveys. This feature is up to 5.14ha (12.7 acres) in size.

Based on site assessments, unevaluated wetland is therefore present at two (2) different locations on the subject property (i.e. wetlands 2 and 3). Both of these features appear to be anthropogenic in origin. NHIC mapping of wetland features does not document either of these features on the subject property, likely due to the relatively small size of these features.

No provincially significant wetlands are present on or adjacent to the subject property and therefore no impact is anticipated on provincially significant wetlands.

In regard to other wetland features, the wetlands on the subject property are proposed to be outside the extraction area on the subject property.

Wetland 3 in the southeastern portion of the subject property will have a 30m buffer no disturbance buffer. In addition to the 30m buffer there will be a berm in place separating the buffer and the area of extraction. Sediment erosion control methods will also be in place to ensure sediment does not enter the wetland. Surface water will continue to enter the wetland feature.

Wetland 2 within the center of the property is also outside the proposed extraction limit of the proposed operation and will have a 10m buffer. Sediment erosion control methods will also be in place to ensure sediment does not enter the wetland. Surface water will continue to enter the wetland feature.

Wetland 1 on adjacent lands is outside the property and therefore outside the limit of extraction will have a 30m buffer which includes the adjacent woodlands which are proposed to have a minimum 15m setback from the limit of extraction.

Wetland 4 directly south of the subject property will have a minimum setback of 51m from the limit of extraction. The buffer includes a 15m wide, 3m high berm as well as the agricultural land that separates the wetland from the subject property.

The proposed operation will be above the water table and there is therefore no anticipated hydrogeological impact to any wetland features on or adjacent to the property.

Wetland and woodland setbacks as well as the creation of berms and utilization of sediment and erosion control measures set out in the site plans will fully mitigate any potential impacts to wetlands on and adjacent to the subject property.

Compensation requirements are not applicable as there will be no loss of wetland features.

5.2 Significant Woodlands

The presence of significant woodlands was assessed through a review of the County of Grey Official Plan (2019).

The Official Plan does not map any significant woodlands on the subject or adjacent lands.

There are therefore no anticipated impacts to significant woodlands as a result of this proposal.

5.3 Significant Valleylands

The presence of significant valleylands was assessed through a review of the County of Grey Official Plan (2019).

Appendix B Constraint Mapping Map 3 of the Official plan indicates that there are no significant valleylands on the subject property. The Saugueen River riparian system directly to the east of the site across Allen Park Road, is mapped as a Significant Valleyland. The Official Plan specifies that adjacent lands are those within 120m of the mapped valley. These features are also considered Core Areas. The Official Plan also indicates that no development or site alteration can occur within Significant Valley lands or their adjacent lands unless it has been demonstrated that there will be no significant impacts.

The valleyland system does not extend to tablelands on the site. There are no direct impacts on the valleyland system. As indicated in this natural heritage assessment, there are also no anticipated indirect impacts associated with wetlands that occur on the subject lands and adjacent lands that

are functionally connected to the valleyland system. Additionally, no significant detrimental impact is anticipated to fish habitat as a result of this proposal.

It is therefore anticipated that there will be no detrimental impacts on the Significant Valley Lands.

5.4 Areas of Natural and Scientific Interest

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

No Areas of Natural and Scientific Interest (ANSI) are present on or adjacent to the subject lands. Buffers and setbacks are therefore not applicable and as no impact to ANSIs is expected, compensation is not applicable.

5.5 Species at Risk – Threatened and Endangered

Ten (10) threatened and endangered species were identified through a combination field work and SAR Screening, set out in Appendix B, as occurring or having the potential to occur on the subject lands or adjacent to the subject property.

These species were: Bank Swallow (*Riparia riparia*), Bobolink (*Dolichonyx orzivorus*), Eastern Meadowlark (*Sturnella magna*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Little Brown Myotis (Myotis lucifugus), Silver-haired Bat (*Lasionycteris noctivagans*), Tri-coloured Bat (*Perimyotis subflavus*), and Butternut (*Juglans cinerea*).

Threatened Birds

Bank Swallows (*Riparia riparia*) are a threatened species. They were observed feeding on and flying over the subject lands. These birds nest along rivers, lakes and cliff edges that provide a vertical face. This species however is more often found nesting in man-made structures now due to habitat loss. This includes bridges and sand and gravel operations. This species was observed feeding over the subject property and is believed to be nesting within nearby sand and gravel operations or on bridges over the Saugeen River. There is currently no nesting habitat on the subject lands. It is recommended that during operation of the pit that the operator adhere to the recommendations of "*The Best Management Practices for the Protection, Creation and Maintenance of Bank Swallow Habitat in Ontario*", developed by the Ministry of Natural Resources which focuses largely on Bank Swallow habitat associated with sand and gravel pits and sets out protection measures to reduce the effects of project activities on Bank Swallows which may nest in active extraction sites. No impact is anticipated on Bank Swallows as a result of this proposal.

Eastern Meadowlark (*Sturnella magna*) is a threatened species. These were observed on agricultural lands situated south of the subject lands. This species occupies large grassland or meadow habitats where they rely on these grass species to build their nests as well as feeding primarily on insects within these habitats. These species will also eat seeds and waste grain. Eastern Meadowlark are also found within agricultural lands that mimic these open grasslands habitats as hay fields. Extensive breeding bird surveys were undertaken on the subject property which identified no Eastern Meadowlark using the subject property for nesting and no nest sites within 120m of the subject lands. No impact is anticipated on Eastern Meadowlark as a result of this proposal.

Bobolink (*Dolichonyx oryzivorus*) is a threatened species. Like Eastern Meadowlark, this species relies on large grassland or meadow habitats and may also be found within certain agricultural lands. Bobolink were not identified during any site survey on the subject property or adjacent lands. No impact is anticipated on Bobolink as a result of this proposal.

Endangered Bats

The Eastern Red Bat *(Lasiurus borealis*) is an endangered bat species. This species was observed based on a single call recorded at the edge of the northern woodland. Although this was a single call, the call was reviewed extensively to confirm species identification. This is believed to be a bat passing by the location as feeding would have resulted in additional call activity. Summer habitat for this species is primarily deciduous and coniferous forests of any age class. Eastern Red Bat. Individuals show high fidelity to small roosting areas within their summer home ranges. Roosting occurs among the foliage of trees and occasionally shrubs. They, however tend to utilize large diameter and tall trees as roost sites are selected based on overhead foliage for cover with open flight space below. They forage over aquatic habitats, meadows, grasslands, and fields, as well as within open-canopied forest, above forest canopies, and along woodland edges.

The Hoary Bat (*Lasiurus cinereus*) is an endangered bat species. This species was recorded a total of 127 times on three bat call recorders over a 17-night period within the months of June and July. This is a relatively low number of calls and is likely associated with a single or small number of bats traveling over the agricultural lands but feeding near or in the wetlands and woodlands on and adjacent to the site. Summer habitat for this species is primarily deciduous and coniferous forests of any age class. Eastern Red Bat. Individuals show high fidelity to small roosting areas within their summer home ranges. Roosting occurs among the foliage of trees and occasionally shrubs. They, however tend to utilize large diameter and tall trees as roost sites are selected based on overhead foliage for cover with open flight space below. They forage over aquatic habitats, meadows, grasslands, fields, and along woodland edges.

The Little Brown Myotis (*Myotis lucifugus*) is an endangered bat species. This species was recorded a total of 21 times on three bat call recorders over a 17-night period within the months of June and July. The highest call frequency was adjacent to the northern woodland. This is a relatively low number of calls and is likely associated with a single or small number of bats traveling over the agricultural lands but feeding near or in the woodland and associated wetland. These bats utilize a wide variety of forested ecosystems for roosting habitat as well as man-made structures such as barns and houses.

The Silver-haired Bat (*Lasiurus noctivagans*) is an endangered bat species. This species was recorded a total of 96 times on three bat call recorders over a 17-night period within the months of June and July. This is a relatively low number of calls and is likely associated with a single or small number of bats traveling over the agricultural lands but feeding near the woodland and wetlands on and adjacent to the subject lands . Silver-haired Bats roost primarily under bark and in the cavities of trees, preferring habitats where large, decaying trees are available. They roost in a variety of large diameter coniferous and deciduous trees and females will generally roost in small groups within tree cavities or under bark. They also frequently utilize old woodpecker cavities. Frequent roost switching is common and they may occasionally roost in or on buildings. Silver-haired Bats will forage in forest as well as forest openings, but are often concentrated along forest edges.

The Tri-coloured Bat (*Perimyotis subflavus*) is an endangered bat species. This species was only recorded once during the 17-night period at the edge of the northern woodland. Again, although this was a single call, the call was reviewed extensively to confirm species identification. This is believed to be a bat passing by the location as feeding would have resulted in additional call activity. These bats utilize deciduous or mixed forest habitats. This species roosts within dead leaf clusters, cavities or within cracks in bark.

As no impact is proposed on woodlands, which are to be protected by a 15m buffer, and scattered specimen trees and hedgerow trees did not exhibit significant snag potential or preferred habitat for roosting, no impact is anticipated on any of the observed bat species as a result of this proposal.

Although no impact is anticipated on bat species, in accordance with best practices and to avoid any issue in regard to potential roosting, it is recommended that any tree removal of scattered or hedgerow trees occur between October 1 and March 31 to ensure no killing, harming, or harassment of incidental endangered bats. If tree removal is to occur outside this window, it should be done in accordance with site investigations and recommendations by a qualified ecologist to ensure that no harm occurs to bats or bat habitat.

Butternut

Butternut (*Juglans cinerea*) was identified within the road allowance on the southeast border of the subject property. This specimen is young and below 10cm DBH. This tree already has evidence of Butternut Canker disease. As this tree was off the subject property and is not expected to be impacted, a full Butternut health assessment was not completed. No other Butternut trees were found on the subject or adjacent lands. This tree will be separated from the extraction area by 65m and which significantly exceeds the regulated 30m habitat buffer and therefore no impact is anticipated on this species.

Endangered Insects

As indicated in the SAR screening several species of endangered insects have theoretical potential to occur on the site but have not been recently observed in this part of the Province. Nine-spotted Lady Beetle, Transverse Lady Beetle and Suckley's Cuckoo Bumble Bee all have the potential to be found in the area historically but are no longer documented to be present in the area. Suckley's Cucko Bumble Bee nests in underground rodent burrow or other dry hollows and is therefore not likely to have occupied the agricultural lands which are to be converted to aggregate extraction. The Lady Beetle both occupy a wide variety of habitat and habitat loss is not the primary impact on these species. The proposed pit will not have an impact on either of these species.

No impact is therefore anticipated on threatened or endangered species and habitat compensation is not applicable.

5.6 Significant Wildlife Habitat

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

This screening, set out in Appendix C indicated the potential and confirmed significant wildlife habitat features and functions on the property and surrounding lands. These include: Bat Maternity Colonies, Bat Migratory Stopover Area, Turtle Wintering Areas, Colonially Nesting Bird Breeding Habitat (Bank and Cliff), Turtle Nesting Areas, Amphibian Breeding Habitat (Woodland) and Special Concern And Rare Wildlife Species.

There is potential for Bat Maternity Colonies and Bat Migratory Stopover Areas within the woodlands on the northern edge of the subject property. As previously discussed, the woodlands on the subject property are to be protected and have an appropriate buffer to avoid impact to all bat species regardless of their conservation status.

Turtle Wintering Areas are most likely present within the Saugeen River or wetlands south of the subject property as are potential Turtle Nesting areas adjacent to these features. The small wetland features present on the subject property do not appear to be deep enough to support wintering

habitat. Additionally, no turtles or evidence of turtles were observed on the subject property. All potential wintering and nesting areas are well outside the proposed area of extraction. As the proposed operation is above the water table and sediment erosion controls will be put in place, there is no anticipated effects on these potential Significant Wildlife Habitat features.

Colonially Nesting Bird Breeding Habitat (Bank and Cliff) is possible along the Saugeen River east of the subject property. From a vantage point on the bridge crossing the river along Concession Road 4N southeast of the subject property, no large exposed banks were observed that would support these species. However, staff were unable to confirm banks conditions closer to the subject property. Bank Swallows were observed feeding over the subject property however these are likely associated with the sand and gravel operations southwest of the subject property. Due to separations from the proposed extraction area, there are no anticipated impacts on this potential Significant Wildlife Habitat feature.

Amphibian Breeding Habitat (Woodland) is present within the wetlands north and south of the subject property. These two features are on adjacent lands and will have sufficient buffers to ensure that there are no impacts on these features. As this is an above water table operation, water levels are not anticipated to change within these features.

Special Concern And Rare Wildlife Species. The following three (3) species of Special Concern were documented on the subject property: Eastern Wood-pewee (*Contopus virens*), Grasshopper Sparrow (*Ammodramus savannarum*) and Barn Swallow (*Hirundo rustica*). Additionally, NHIC squares 17NJ0495 and 17NJ0494 documented records of Northern Brook Lamprey (*Ichthyomyzon fossor*) and Eastern Ribbon Snake (*Thamnophis saurita*). A SAR screening also indicated that potential habitat for Canada Warbler (*Cardellina canadensis*), Common Nighthawk (*Chordeiles minor*), Golden-winged Warbler (*Vermivora chrysoptera*), Wood Thrush (*Hylocichla mustelina*), American Bumble Bee (*Bombus pensylvanicus*), Monarch (*Danaus plexippus*), and Snapping Turtle (*Chelydra serpentina*).

Eastern Wood-pewee (*Contopus virens*) prefer to live in large deciduous or mixed forest habitats with little undergrowth. This species is also often found along forest edges and forest openings. This species was identified within the woodlands on the northern edge of the property as well as adjacent woodlands in the same area. As there will be a setbacks from the woodlands on the subject property and none of the trees within these woodlands are proposed to be removed there is no anticipated effects to this species.

Grasshopper Sparrow (*Ammodramus savannarum*) live in open grasslands as well as agricultural lands that mimic this habitat like hay fields. This species was observed within the cultural meadow on the subject property as well as along the driveway which goes to the current dwelling. The subject property provides approximately 5.6acres of suitable habitat for this species. As there are surrounding agricultural lands that mimic that habitat needed for this species and there will be small edge habitats created along the edge of the operation there is no anticipated negative effects foreseen to this species.

Northern Brook Lamprey (*Ichthyomyzon fossor*) live within the sandy slow-moving bottoms or edges of watercourses. This species is likely using the Saugeen River as habitat to ensure no harm comes to this species sediment erosion catchments should be put into place to ensure none of this enters the Saugeen River. With steps around erosion control and the operation being above the water table there is no anticipated negative effects for this species.

Eastern Ribbon Snake (*Thamnophis saurita*) are associated with wetlands or the edges of lakes and rivers. This species is a great swimmer and will often travel across wetlands and waterbodies. This species of snake was not observed on the subject property and the wetlands on the subject property are to small to represent quality habitat. However, the larger southern wetland on the subject

property is being protected and has a chance to represent habitat for this species. There are no anticipated negative effects for this species.

Canada Warbler (*Cardellina canadensis*) usually live in large deciduous, coniferous and mixed swamp habitats. These birds prefer forests to have well developed shrub layers which help hide nests which are located on or near the ground. This species was not documented on or adjacent to the property during breeding bird surveys. Due to the lack of habitat on the subject property there is no anticipated effects to this species.

Common Nighthawk (*Chordeiles minor*) nest in a variety of open habitats including rock barrens, bogs, lakeshores, parks, orchards and even cultivated fields. This species is very vocal and often observed on sites where it is nesting. This species was not observed during any ecological site visit on or adjacent to the property. As this species nests on the ground their eggs are highly vulnerable to predators like raccoons, skunks and foxes among many other species, due to this the subject property being primarily covered by agricultural lands which draws in these predators it does not provide quality nesting habitat for this species. The proposed development will have no effect on this species.

Barn Swallow (*Hirundo rustica*) nest almost exclusively on human made structures including barns, bridges, dwellings and culverts. This species feeds on aerial insects over farmland, wetlands, forests and even urban development. This species was not documented during any ecological site visit on the property. As adjacent properties are also covered primarily by agriculture uses and have more agricultural structures like barns, it is expected that these bird species use these more favourable conditions for nesting. As this species is not using the property for nesting habitat there is no anticipated effects to this species.

Golden-winged Warbler (*Vermivora chrysoptera*) live in dense shrub cover and thickets usually associated with disturbances. This species can also be found in edge habitats including forest edges, hydro corridors and logging areas. The subject property does not have these dense shrubby areas or thickets. Additionally this species was not identified during any ecological survey on the property. This species will not be affected by the proposed expansion.

Wood Thrush (*Hylocichla mustelina*) live in large deciduous or mixed forests with dense ground and shrub cover. These species can also be found along forest edges and openings within the forest. This species was not documented during any ecological survey on the property. Additionally the woodlands on the property will have a 15m buffer which will protect any potential habitat for this species.

American Bumble Bee (*Bombus pensylvanicus*) this species nests within dense grass clumps and also will occasionally nest within rodent burrows. This species can be found across southern Ontario within agricultural land, meadows and prairie habitats. This species was not observed on or adjacent to the subject property. This species will continue to have potential habitat on the property within the undisturbed area in the southwest corner of the property.

Monarch (*Danaus plexippus*) can live in a variety of habitats if nectar from flowers is available to eat. The caterpillar stage of this butterfly feeds on Common Milkweed and is associated with meadows or other similar habitats that also have Common Milkweed. This species was not identified on or adjacent to the subject property, but Common Milkweed was identified within meadow portions of the property. Habitat will remain for this species along property borders and within the undisturbed southwest corner of the property.

Snapping Turtle (*Chelydra serpentina*) can live in almost any aquatic habitat including lakes, rivers, ponds and wetlands. This species was not identified on the subject property. However, potential

habitat is present within the small southwest wetland on the property and the adjacent Saugeen River. This wetland feature is being protected and an approximate 105m buffer will ensure no harm comes to this species. No quality nesting habitat is present on the subject property for this species, however potential nesting habitat will remain within the 105m buffer.

5.7 Fish Habitat

Fish habitat is present within the southeastern wetland on the subject property. Ecological staff at SBA observed what appeared to be Cyprinid species within this feature. To ensure no harm comes to this feature there is a 105m buffer of no disturbance as well as sediment erosion controls which will be put into place. Measure will also be in place to ensure surface water from the area outside the extraction area can still enter the wetland feature after going through soil erosion controls.

As previously discussed, there will be a minimum of a 70m buffer from the Saugeen River which supports abundant diverse fish populations. The combination of extraction being above the water table and the utilization of buffers and sediment erosion controls measures mixed will ensure there are no direct surface water runoff effects to the Saugeen River.

As set out in a separately prepared hydrogeological assessment prepared by Tatham Engineering, under existing conditions, the majority of the proposed expansion area drains east to the Saugeen River as sheet flow. The drainage area of the Saugeen River at this location is 690.2 km2 while the drainage area of the proposed expansion area is 0.14 km2. The overall reduction in drainage area to the Saugeen River as a result of the proposed expansion is 0.02% and is expected to have negligible impacts to the watercourse.

Approximately 1.3 ha of the proposed expansion area currently drains south to a tributary of the Saugeen River which has four small online, unevaluated wetland features before connecting to the main branch of the River. The total catchment area of this tributary is 87.4 ha and as such the proposed expansion will result in a decrease in drainage area of 1.5%. Based on this, the impact on the tributary is expected to be minimal.

Buffers and sediment erosion methods and the relatively small change in surface drainage due to increased infiltration, will therefore mitigate any potential issues relating to fish habitat off the subject property.

The proposed operation is not anticipated to impact fish habitat and compensation is not applicable.

5.8 Connectivity and Linkages

Site investigation indicated the no significant connectivity or linkages features on the subject property as the woodland partially located on the site is isolated within the agricultural landscape. However, the woodland will be protected from development and any minor linkage function it may have will therefore be protected.

The wetlands in the south-east corner of the site and wetlands south of the subject lands provide localized linkage functions to the Saugeen River. These features are outside the area of extraction and will be buffered and protected from impact through utilization of berms and sediment control.

All potential connectivity and linkages are being protected as areas outside the limit of extraction and with buffers.

There are no anticipated net impacts on connectivity or linkages and compensation is not applicable or required.

5.9 Cumulative Impact Assessment

Although a cumulative ecological impact assessment is not a policy requirement, the potential cumulative natural heritage impacts of this proposal have been considered.
Generally cumulative impacts arise where there may be one or more negative impacts on natural heritage features or functions. As set out in this assessment, no negative impacts are anticipated as a result of this proposal and so the potential for cumulative impacts is also negated.

As indicated in this natural heritage assessment no impacts are anticipated on provincially significant wetlands as none are present on the site or on adjacent lands. This would logically imply that the project has no potential cumulative impact on provincially significant wetlands.

Unevaluated wetland features on and adjacent to the site are to be protected with no encroachment and with buffers and sediment control measures applied. Extraction is to be above the water table and so no indirect hydrogeological impact on these features is anticipated. With no anticipated impact to these features, it is again concluded that there will be no potential for cumulative impact on non-provincially significant wetlands.

There are no significant woodlands on or adjacent to the subject lands. As there will be no impact to significant woodlands, there is no potential for cumulative impacts resulting from this project.

The fact that extraction will occur above the water table, that there will be an ample setback from fish habitat, sediment control mitigation will be employed and there are no anticipated negative hydrological or hydrogeological impacts means that no fish habitat impacts are expected. An absence of impacts from this proposal suggests no potential for cumulative impacts.

As indicated in this assessment, there are no direct impacts to significant valleylands associated with this proposal. There is also no potential for indirect impacts, and the proposal maintains wetlands which may be functionally connected to the valleylands and there is no anticipated impact to fisheries. An absence of both direct and indirect impacts on significant valleylands suggest no potential for cumulative impacts on such features.

There are no ANSIs on or adjacent to the subject lands and therefore no impacts, cumulative or otherwise are anticipated on such features.

Bank Swallows were observed feeding over the subject lands. No nesting habitat currently occurs on the subject lands. Aggregate extraction has the potential to create nesting habitat, although it is recommended that pit operations be managed in such a manner as to not create nesting habitat so as to avoid any conflicts, or that where nesting does occur in open faces this habitat be managed in such a manner as to protect the nests during the nest habitat reliance period. Accordingly, no negative impact is expected and there may be a temporary positive impact. The same conclusion would apply to the potential for cumulative impacts.

No impact is expected to occur on Eastern Meadowlark or Bobolink as a result of this proposal and the same conclusions apply to cumulative impact potential in this regard.
As indicated in this assessment SAR bat species were observed on the subject lands, but as the woodlands are to be retained and protected with a buffer, no negative impact on this species is anticipated. Since no SAR bats are to be harmed by the proposal, there is no potential for cumulative impacts.

The single Butternut observed is to be protected with an appropriate setback. No impact to this species means that there will also be no cumulative impact on Butternut arising from this project.

No other SAR species are anticipated to be impacted by the proposal and no cumulative impact on SAR species is therefore anticipated.

A variety of significant wildlife habitat features were assessed for potential impact. Such features were generally found to be absent or were restricted either to adjacent lands or to areas on the subject property that were to be protected (woodland and wetlands and their associated buffers). The only feature which was found to be negligibly impacted was Grasshopper Sparrow habitat. The conversion of the lands from agricultural uses to aggregate extraction is anticipated to increase the amount of habitat utilized by Grasshopper Sparrow on the subject lands as meadow is expected to occupy the setbacks and buffers along the perimeter of the property. No significant impact is therefore anticipated and the potential for cumulative impacts on this species is likewise negated.

The natural heritage assessment concluded that there are no significant connectivity or linkage features on the subject property and that external linkages and corridors are adequately protected from impact by provided buffers and mitigation. The absence of impacts on such features again suggests no potential for cumulative impacts.
The fact that the proposal does not result in negative impacts on natural heritage therefore negates any potential for negative cumulative impacts on natural heritage features or functions.

5.10 MIGRATORY BIRDS ACT AND FISH AND WILDLIFE CONSERVATION ACT

All migratory bird nests are protected by the Migratory Birds Act when they contain a live bird or viable egg. The nests of 377 migratory bird species can be removed when they are no longer active, that is when they do not contain a live bird or viable egg. For most nests, once the chicks have fledged have left the nest on their own, and it is no longer occupied by a migratory bird or eggs, they no longer continue to have conservation value, and most species will build a new nest each year.

There are some migratory birds who either re-use their own nests from one year to the next, or whose nests are commonly re-used by other species of migratory birds. The nests of 18 species listed in Schedule 1 of the Migratory Birds Act are protected year-round. Of these 18 species, the following occur in Ontario Great Egret, Great Blue Heron, Cattle Egret, Green Heron, Snowy Egret, Black-crowned Night Heron and Pileated Woodpecker.

Of the year-round protected species only the Pileated Woodpecker has the potential to occur on this site as no suitable habitat exists for the other species. No Pileated Woodpecker was documented in observations in the vicinity of the subject lands and during breeding bird surveys and no nesting cavities were observed in or adjacent to the proposed development area.

Birds protected by the Fish and Wildlife Conservation Act are: pelicans, cormorants, vultures, ospreys, kites, eagles, hawks, caracaras, falcons, partridges, pheasants, grouse, ptarmigan, turkey, quail, owls, kingfishers, jays, nutcrackers, magpies and ravens. Specially protected birds include American White Pelican, Belted Kingfisher, Gray Jay, Blue Jay, Common Raven, Rusty Blackbird, Brewer‘s Blackbird and Yellow-headed Black bird.

While no stick nests, owl nesting cavities or Pileated Woodpecker nests were observed in or adjacent to the proposed disturbance area during site investigations associated with the preparation of this assessment, nesting may occur prior to the proposed physical development activities.

To ensure compliance and avoid damaging nest of avian species the following recommendations apply to both the proposed filling activity as well as any subsequent development:

- no vegetation clearing between April 1st and August 31, unless the proposed clearing area has been reviewed by a qualified ecologist who determines no active nests are present;
- no clearing of any trees containing Pileated Woodpecker nests at any time of year, unless the nest has been abandoned, the appropriate waiting period has elapsed and the nest is declared abandoned in accordance with regulatory requirements under the Migratory Birds Act;
- no clearing of any trees containing stick nests or owl nesting cavities at any time of year, unless the proposed clearing area has been reviewed by a qualified ecologist who determines no active or viable long-term nests of species of concern are present.

6.0 Conclusion - Net Impact Assessment and Policy Compliance

The proposed pit expansion is on lands which are largely cleared and also developed with a single detached dwelling and lengthy driveway. The site therefore supports limited natural heritage features which consist of a portion of a non-significant woodland along the north property boundary and unevaluated wetlands in the eastern and south-eastern portion of the site which are located outside the proposed limits of extraction.

There are no provincially significant wetlands on or adjacent to the site. There are no significant woodlands on or adjacent to the site. There are no ANSI's on or near the site. The adjacent lands do contain natural heritage features in the form of a significant valleyland, fish habitat, and significant wildlife habitat features. These all lie outside of the proposed extraction area and are protected from development impact by a combination of buffers, berms and utilization of sediment and erosion control. The fact that proposed extraction is above the water table also ensures no impact to these features.

The woodland located on the subject and adjacent lands to the north of the proposed extraction area acts as habitat for endangered bat species. No disturbance to the woodland is proposed and appropriate buffers to the limit of extraction are also established.

An endangered Butternut tree is located along the Allen Park Road allowance. This tree is well separated from the potential extraction area and will not be impacted.

Site preparation and extraction will require some minor incidental tree removal outside the woodlands. To avoid any impact to migratory birds and roosting bats, a tree clearing window has been recommended and any tree removal which might be required outside that window is to be subject to investigation by and recommendations of an ecologist to ensure no harm to nesting birds or roosting bats.

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

All of which is respectfully submitted,

SKELTON, BRUMWELL & ASSOCIATES INC.
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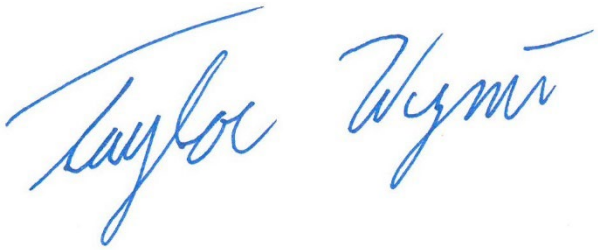

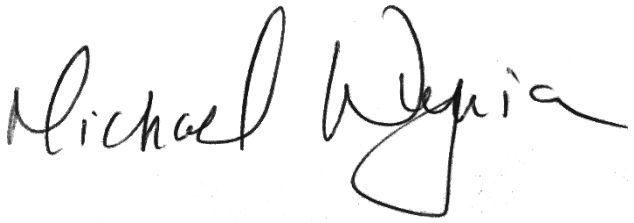

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Appendix A

Site Visit Data and Observed Species Lists

Vascular Plant List									
SCIENTIFIC NAME	**ENGLISH COMMON NAME**	**SAR**	**S RANK**	**G RANK**	**N RANK**	**EXOTIC STATUS**	**COEFF CONSERVATISM**	**COEFF WETNESS**	**S RANK REASONS**
Acer negundo	Manitoba Maple	N	S5	G5	N5		0	0	Widespread in southern and central Ontario, as far north as southern parts of northwestern Ontario (e.g. Rainy River District), mostly in disturbed woodland and urban areas. Commonly cultivated and escaping cultivation; considered invasive in some areas including southern Ontario where considered a Category 1 invasive exotic species by Urban Forest Associates (2002) meaning an "aggressive invasive exotic species that can dominate a site to exclude all other species and remain dominant on the site indefinitely". Probably mostly introduced in the province though likely native in floodplain woods in southwestern and southern northwestern Ontario (see McIlveen 2020). Considered native to Ontario by Morton and Venn (1990) and native to southern Michigan by Voss and Reznicek (2012). The distribution and status of infraspecific taxa in Ontario is poorly known.

Acer rubrum	Red Maple	N	S5	G5	N5		4	0	A widespread and common tree species throughout much of the province, north to the Lake Superior area and west to the Manitoba border; absent from areas north of Lake Superior including the Hudson Bay Lowland. Occurs in a variety of forest types, both moist and dry. Distribution and status of infraspecific taxa in Ontario is poorly known.

Acer saccharinum	Silver Maple	N	S5	G5	N5		5	-3	Widespread in southern Ontario north to the Sault Ste. Marie area; absent as a native tree from most of northern Ontario. Often planted with cultivated individuals generally with more deeply cut leaves than native trees. Generally in moist areas and often a dominant in southern Ontario wooded swamps. Hybridizes with Acer rubrum (A. x freemanii) creating a variety of intermediates.

Acer saccharum	Sugar Maple	N	S5	G5	N5		4	3	A widespread and common forest tree throughout southern and central Ontario north to north shore of Lake Superior and west to the Manitoba border; largely absent north of Lake Superior. Generally in upland forests and often a dominant tree species, e.g. in Beech-Maple forests. An economically important timber tree and the primary species used in maple syrup production. Declining in some parts of its range (Westing 1966).

Achillea millefolium	Common Yarrow	N	SNA	G5	NNR	SE5?		3	Distribution and status of native yarrow (Achillea borealis) vs. introduced yarrow (A. millefolium) in Ontario is poorly known, though most plants are presumably native. The native and introduced plants hybridize complicating identification. Achillea millefolium in the strict sense is an occasional escape from cultivation, e.g. reported on Manitoulin Island by Morton and Venn (2000) and from the southern James Bay area of the Hudson Bay Lowland by Riley (2003). Mapped from about 25 scattered southern Ontario sites by Warwick and Black (1982).

Aesculus glabra	Ohio Buckeye	N	S1	G5	N1		10	0	Native Canadian populations known only from rich, moist woods on Walpole Island, Lambton County, where first collected by Susan G. Aiken and Stephen J. Darbyshire in 1981 (DAO; Darbyshire and Oldham 1985, Argus et al. 1982-1987). An occasional escape from cultivation elsewhere in southern Ontario, e.g. in Peterborough County (Sadler 1993), Simcoe County (A.A. Reznicek pers. comm. April 2019), and six Carolinian Zone counties (Oldham 2017).

Allium canadense	Canada Garlic	N	S5	G5	N5		8	3	Widespread but local in southern Ontario almost entirely south of the Precambrian Shield, particularly along river floodplains. The Canadian distribution is mapped by Dore (1971) who speculated that early Europeans (explorers, missionaries, traders, and hunters) dispersed the species along major waterways, which were travel routes at the time. Dore (1971) mapped the Canadian distribution and shows about 40 southern Ontario sites.

Allium tricoccum	Wild Leek	N	S4	G5	N4		7	3	Wild Leek is harvested by humans in some areas of Ontario (e.g. Greater Toronto Area, Muskoka, Ottawa and eastern Ontario), including in protected areas and is probably declining in these areas. Harvesting pressure may be increasing in parts of Ontario and elsewhere (e.g. Edgar et al. 2012). In Quebec, a fifth of known populations have disappeared in recent times and was the first species to be designated "Threatened" (="Vulnerable" in French) (Small et al. 1999). Invasive earthworms are another potential factor in the decline of this species, which is still locally common in many areas of southern Ontario, particularly in remote locations.

Ambrosia artemisiifolia	Common Ragweed	N	S5	G5	N5		0	3	A common weed of agricultural areas, roadsides, and other disturbed, open areas in southern Ontario and more locally in northwestern Ontario. Not known from the Hudson Bay Lowland. A native species, but typically found in disturbed and usually weedy situations (Bassett and Terasmae 1962). The Canadian distribution of Ambrosia artemisiifolia is mapped by Bassett and Crompton (1975; note that Figures 2 and 3 are reversed).

Anemonastrum canadense	Canada Anemone	N	S5	G5	N5		3	-3	A widespread and locally common wildflower occurring virtually province-wide typically in moist open ground such as meadows, shorelines, roadsides, and woodland openings and edges.

Anemone virginiana var. virginiana	Tall Anemone	N	S5?	G5T5	N5		4	3	Widespread and common throughout southern Ontario. Distribution and status relative to var. cylindroidea (and to a lesser extent var. alba) in Ontario is poorly known. FNA Vol. 3 (2007) maps both var. cylindroidea and var. virginiana as occurring throughout southern Ontario south of the Precambrian Shield, though likely var. virginiana is more common. Some specimens cannot easily be assigned to variety (Voss and Reznicek 2012).

Aralia nudicaulis	Wild Sarsaparilla	N	S5	G5	N5		4	3	Common throughout most of the province in moist or dry woods and clearings, north to the Fawn River at ca. 54 degrees 40 minutes N (Scoggan 1978-1979).

Arctium minus	Common Burdock	N	SNA	GNR	NNA	SE5		3	Widespread and locally common in southern and central Ontario north to the Lake Superior and Lake Nipigon area and west to the Manitoba border; Canadian distribution mapped by Gross et al. (1980). A species of disturbed open ground such as along roadsides, railways, fields, and in urban areas.

Asclepias incarnata	Swamp Milkweed	N	S5	G5	N5		6	-5	Widespread wetland plant in southern and central Ontario, also occurring in southern areas of northwestern Ontario (southern Kenora and Rainy River Districts).

Asclepias syriaca	Common Milkweed	N	S5	G5	N5		0	5	Widespread and locally common on roadsides, old fields, and other open, disturbed habitats in southern and central Ontario (Bhowmik and Bandeen 1976). Although not mapped from the Lake Superior area or westward in Ontario by Bhowmik and Bandeen 1976), it is now widespread in southern parts of northwestern Ontario (Thunder Bay, Rainy River, and southern Kenora Districts). Asclepias syriaca is the primary larval foodplant in Ontario of the declining and at risk Monarch butterfly (Danaus plexippus).

Asparagus officinalis	Garden Asparagus	N	SNA	G5?	NNA	SE5		3	Commonly cultivated and widely escaped to roadsides, fencerows, and other disturbed and more or less open areas. Reported north to Manitoulin Island (Morton and Venn 2000) and the Ottawa District (Brunton 2005).

Betula papyrifera	White Birch	N	S5	G5	N5		2	3	A widespread and common forest tree occurring nearly province-wide, though rare in extreme southwestern Ontario and absent from the most northern areas of the Hudson Bay Lowland (Riley 2003).

Boehmeria cylindrica	False Nettle	N	S5	G5	N5		4	-5	A widespread and locally common wetland plant of floodplains and swamps in southern Ontario primarily south of the Precambrian Shield. Canadian distribution mapped by Bassett et al. (1974).
Carex	Sedge Sp	N	SNA	N/A	N/A				

Carex arctata	Drooping Woodland Sedge	N	S5	G5	N5		5	5	A widespread and locally common sedge of a variety of forest habitats from the Carolinian Zone north to southern areas of the Hudson Bay Lowland.
Carex communis	Fibrous-root Sedge	N	S5	G5	N5		6	5	Locally common sedge of upland deciduous and mixed forests in southern and central Ontario north to the north shore of Lake Superior and Lake Nipigon.

Carex lupulina	Hop Sedge	N	S5	G5	N5		6	-5	A widespread wetland sedge in a variety of open and wooded habitats throughout southern Ontario mainly south of the Precambrian Shield (Reznicek and Ball 1974).

Caulophyllum thalictroides	Blue Cohosh	N	S5	G5	N5		5	5	Widespread and locally common early spring flowering woodland herb in southern Ontario, primarily south of the Precambrian Shield, and also occurring in the Sault Ste. Marie area, southern Thunder Bay District, and Rainy River District in northwestern Ontario. Less common and more southerly distributed in southern Ontario than Caulophyllum giganteum (Dore 1964, Leconte and Blackwell 1985).

Centaurea stoebe	Spotted Knapweed	N	SNA	GNR	NNA	SE5		5	A widespread, locally abundant and increasing invasive plant of roadsides and other dry, open, disturbed sites including open sites within natural habitats (e.g. alvar). Primarily in southern Ontario but locally north to Algoma and Thunder Bay Districts (Watson and Renney 1974).

Cichorium intybus	Wild Chicory	N	SNA	GNR	NNA	SE5		5	A widespread and common introduced species of roadsides, fields, and open disturbed sites, north to Thunder Bay and Cochrane (Scoggan 1978-1979); absent from the Hudson Bay Lowland (Riley 2003).

Cirsium arvense	Canada Thistle	N	SNA	G5	NNA	SE5		3	Widespread and locally common weed of open anthropogenically disturbed ground throughout most of Ontario south of the Hudson Bay Lowland (where rare and known mainly from settlements; Riley 2003). Considered a Category 1 invasive exotic species in southern Ontario by Urban Forest Associates (2002) meaning an "aggressive invasive exotic species that can dominate a site to exclude all other species and remain dominant on the site indefinitely".

Cirsium vulgare	Bull Thistle	N	SNA	GNR	NNA	SE5		3	An aggressive, weedy, introduced thistle of roadsides, fields, and other open disturbed areas throughout southern Ontario north to Thunder Bay District.

Cornus alternifolia	Alternate-leaved Dogwood	N	S5	G5	N5		6	3	Common and widespread in southern Ontario and becoming less frequent northward along the eastern shore of Lake Superior and west to Rainy River District; northern limit near 49 degrees North (Soper and Heimburger 1982). A species of deciduous and mixed forests and edges, floodplains, and thickets.

Cornus obliqua	Silky Dogwood	N	S5	G5	N5		2	-3	In low damp ground along streams and in marshes, ditches, thickets, and open woods. Widely distributed and locally common east and southwest of the Canadian Shield in southern Ontario; northward along the Bruce Peninsula to Manitoulin Island; also in the Ottawa Valley and the southern part of Nipissing District (Soper and Heimburger 1982).

Cornus sericea	Red-osier Dogwood	N	S5	G5	N5		2	-3	Widespread and locally common wetland shrub occurring province-wide (Soper and Heimburger 1982).
Cratageous Sp.	Hawthorn	N	SNA	N/A	N/A				

Daucus carota	Wild Carrot	N	SNA	GNR	NNA	SE5		5	Widespread and locally abundant introduced weed of roadsides, fields, and waste areas throughout southern Ontario, north to Thunder Bay District (Thunder Bay Field Naturalists 2015); absent from the Hudson Bay Lowland (Riley 2003).

Dipsacus fullonum	Common Teasel	N	SNA	GNR	NNA	SE5		3	Widespread along roadsides, fields and disturbed open areas throughout southern Ontario, primarily south of the Precambrian Shield, but occurring north to Timmins, Cochrane District (Scoggan 1978-1979). Ontario distribution mapped by Montgomery (1957).

Echium vulgare	Common Viper's Bugloss	N	SNA	GNR	NNA	SE5		5	A widespread and locally common European weed of dry, disturbed, usually sandy or gravelly places such as roadsides, railroads, fields, and vacant lots; sometimes abundant on disturbed alvars. Occurs in Ontario north to the north shore of Lake Superior and Lake Nipigon areas (Klemow et al. 2002).

Equisetum arvense	Field Horsetail	N	S5	G5	N5		0	0	Extremely widespread and common throughout the province in a variety of habitats (Cody and Britton 1989); sometimes weedy (Cody and Wagner 1980).

Erigeron annuus	Annual Fleabane	N	S5	G5	N5		0	3	A native but weedy species occurring in more or less disturbed sites (dry or moist) including fields, roadsides, clearings and trails in forests, cultivated ground; floodplains, wetlands, open mixed forests, and shores (Reznicek et al. 2011). Widespread and locally common in southern and central Ontario, north to Matheson, Cochrane District (Scoggan 1978-1979). If var. septentrionalis is included in Erigeron annuus (not done here), then E. annuus occurs north to the Hudson Bay Lowland (based on recent collections at NHIC, TRT). Riley's (2003) listing of Erigeron annuus from the Hudson Bay Lowland refers to ssp. strigosus (here treated as E. strigosus).

Erythronium americanum	Yellow Trout-lily	N	S5	G5	N5		5	5	A widespread and locally abundant spring wildflower of rich deciduous forests in southern Ontario, north to the southeastern Lake Superior area in Algoma District (Holland 1974).

Euphorbia cyparissias	Cypress Spurge	N	SNA	G5	NNA	SE5		5	Widespread along roadsides, old fields, and other open disturbed areas in southern and central Ontario north to the north shore of Lake Superior (Moore and Lindsay 1953, Stahevitch et al. 1988).

Euthamia graminifolia	Flat Topped Goldenrod	N	S5	G5	N5		2	0	Widespread and locally common throughout Ontario, usually in moist open ground, disturbed areas, roadsides and fields (Semple et al. 1999).

Eutrochium maculatum	Spotted Joe Pye Weed	N	S5	G5	N5		3	-5	Widespread and common wetland wildflower throughout most of the province north to southern areas of the Hudson Bay Lowland. Three varieties are recognized from Ontario by FNA Vol. 21 (2006).

Fragaria vesca	Woodland Strawberry	N	S5	G5	N5		4	3	Ssp. americana is a widespread native plant of forests, swamps, woodland edges and openings, occurring throughout southern and central Ontario, north to the southern Hudson Bay Lowland (Riley 2003). Ssp. vesca is a rare escape from cultivation.

Fragaria virginiana	Wild Strawberry	N	S5	G5	N5		2	3	Widespread and abundant province-wide in a variety of forested and open habitats. Relative distribution and status of ssp. glauca and ssp. virginiana in Ontario is poorly known, though ssp. virginiana is more widespread and ssp. glauca mainly or entirely restricted to northern Ontario (Staudt 1999).

Fraxinus americana	White Ash	N	S4	G4	N4		4	3	Widespread in southern and central Ontario in dry to mesic upland sites, but declining in southwestern Ontario due to Emerald Ash Borer. Ash trees are being decimated in southwestern Ontario by Emerald Ash Borer, which now has populations in Ottawa, Toronto, and Sault Ste. Marie and is likely to continue to expand its range and kill Fraxinus species. This species has been assessed as Critically Endangered globally by the IUCN Red List (Barstow et al. 2018).

Fraxinus pennsylvanica	Green Ash	N	S4	G4	N5		3	-3	Widespread in southern and central Ontario in mesic to wet sites; also occurring locally in Rainy River District, northwestern Ontario (Maycock et al. 1980). Declining rapidly in southern Ontario due to Emerald Ash Borer. Ash trees are being decimated in southwestern Ontario by Emerald Ash Borer, which now has populations in Ottawa, Toronto, and Sault Ste. Marie and is likely to continue to expand its range and kill Fraxinus species. This species has been assessed as Critically Endangered globally by the IUCN Red List (Barstow et al. 2018).

Galium asprellum	Rough Bedstraw	N	S5	G5	N5		6	-5	Widespread throughout most of the province though absent from much of northwestern Ontario and the northern Hudson Bay Lowland. Northern Ontario distribution mapped by Riley (2003).

Galium triflorum	Fragrent Bedstraw	N	S5	G5	N5		4	3	A widespread and locally common bedstraw of deciduous, coniferous, and mixed forests, swamps, fens, river and stream banks, sometimes on shores and in clearings (Reznicek et al. 2011). Occurs in Ontario from southwestern Ontario, where common (Oldham 2017), north to southern areas of the Hudson Bay Lowland (Riley 2003).

Geranium robertianum	Herb-Robert	N	S5	G5	N5		2	3	Widespread in southern Ontario in disturbed woodlands, woodland paths, and other disturbed and usually wooded sites. Sometimes considered introduced in Ontario (e.g. Morton and Venn 1990, 2000), though considered native by VASCAN (Brouillet et al. 2010+). Considered presumably native in Michigan by Voss and Reznicek (2012), native in New England by Haines (2011), and collected in Ontario as early as 1860 on Cove Island off the tip of the Bruce Peninsula by Austin (MICH).

Ilex verticillata	Common Winterberry	N	S5	G5	N5		5	-3	A widespread and locally common wetland shrub in southern and central Ontario north to southeastern Lake Superior and the Sudbury area. Not found along the north shore of Lake Superior (e.g. absent from Thunder Bay District; Thunder Bay Field Naturalists 2015), but found locally in Rainy River District along Rainy River (Soper and Heimburger 1982).

Impatiens capensis	Spotted Jewelweed	N	S5	G5	N5		4	-3	A widespread and locally abundant native wetland plant of swamps, floodplains, marshes, ditches, shorelines, and moist forests. Occurs throughout southern and central Ontario north to southern areas of the Hudson Bay Lowland.

Juglans cinerea	Butternut	Y	S2?	G3	N2?		6	3	Widespread but declining forest tree in southern Ontario occurring primarily south of the Precambrian Shield on calcareous soils (Fox and Soper 1953). Sometimes planted north of its native range. Populations of this species are being devastated throughout its natural range by a fungal disease known as Butternut Canker. Butternut canker (Sirococcus clavigignenti-juglandacearum) is a fungus that produces stem cankers that girdle and kill adult trees. In some areas up to 77% tree mortality has occurred. Butternut is widespread and relatively common in southern Ontario (more than 100 occurrences). Butternut canker was first detected in this province in 1991. In eastern Ontario 90% of trees surveyed were found to be infected with the canker. Overall, the long-term outlook for Butternut is bleak. It is declining quite rapidly and there are few populations not affected by disease. Despite the fact that there may be numerically more than 100 populations, there are almost certainly far fewer than 100 robust and healthy populations which will persist for the long term. The abundance and condition are both in rapid decline due to Butternut Canker disease, with no known remedy. Even with the canker evident and widespread, there are a large number of occurrences persisting though decline and loss of most or all of them is likely. Some reports from more northern areas of the province involve planted individuals or those spreading from cultivation (e.g. Morton and Venn 2000). Hybrids with Japanese Walnut (Juglans ailantifolia) are apparently common in southern Ontario (McLaughlin and Hayden 2012). See Catling and Small (2001), COSEWIC (2003b), Furnier et al. (1998), Katovich and Ostry (1998), Michler et al. (2005), Ross-Davis et al. (2008), Schultz (2003c).

Juglans nigra	Black Walnut	N	S4?	G5	N4?		5	3	A native species in Ontario's Carolinian Zone (Fox and Soper 1953) and a widespread introduction outside it. Vulnerable to Thousand Cankers Disease, a fungal disease (Geosmithia morbida) transmitted by Walnut Twig Beetle (Pityophthorus juglandis), which is widely spreading in eastern North America (Randolph et al. 2013) and seems likely to reach Ontario and negatively impact native Black Walnut populations.

Leucanthemum vulgare	Oxeye Daisy	N	SNA	GNR	NNA	SE5		5	A Eurasian native widely naturalized in southern and central Ontario in roadsides, fields, railroads, disturbed sites, shores, clearings and trails in forests. Occurs north to southern areas of the Hudson Bay Lowland (Riley 2003).

Lonicera canadensis	Canada Fly Honeysuckle	N	S5	G5	N5		6	3	A widespread and locally common forest shrub occurring throughout southern and central Ontario, north to the north shore of Lake Superior, Lake Nipigon, and the southern James Bay drainage (Soper and Heimburger 1982). Not reported from the Hudson Bay Lowland by Riley (2003) but collected along the Pagwachuan River in the southern Hudson Bay Lowland in 2009 during Far North Biodiversity Project fieldwork (M.J. Oldham 37084 at MICH, TRT).

Lotus corniculatus	Garden Bird's-foot Trefoil	N	SNA	GNR	NNA	SE5		3	A well-established escape from cultivation to roadsides, lawns, and other disturbed open areas in southern and central Ontario, north to Lake Superior (Turkington and Franko 1980) and Moosonee, Cochrane District (M.J. Oldham 40102 at TRT in 2012), and west to Rainy River District (M.J. Oldham and W.D. Bakowsky 29737 at TRTE in 2003). Canadian distribution mapped by Zandstra and Grant (1968) and Turkington and Franko (1980).

Maianthemum racemosum	Large False Solomon's Seal	N	S5	G5T5	N5		4	3	Widespread in forests throughout southern and central Ontario, north to Matheson, Cochrane District, and the north shore of Lake Superior and west to the Manitoba border. Absent from the Hudson Bay Lowland (Riley 2003).

Malus pumila	Common Apple	N	SNA	G5	NNA	SE4		5	Widely cultivated for its edible fruit and frequently spread to roadsides, shores, railroad embankments, fields, disturbed places, and sometimes forested areas. Widespread and locally common in southern Ontario, north to at least the east shore of Lake Superior at Michipicoten, Algoma District (Scoggan 1978-1979).

Medicago sativa	Alfalfa	N	SNA	GNR	NNA	SE5		5	Widespread along roadsides and in other open disturbed sites in southern and central Ontario.

Menispermum canadense	Canada Moonseed	N	S4	G5	N4		7	0	Widespread but uncommon and local woody vine of swamps, rich forests, and thickets, especially on floodplains. Most common in the Carolinian Zone, but occurring north to the Bruce Peninsula (Johnson 2016), one site on Manitoulin Island (Morton and Venn 2000) and Ottawa (Brunton 2005). Ontario distribution mapped by Soper and Heimburger (1982).

Onoclea sensibilis	Sensitive Fern	N	S5	G5	N5		4	-3	Widespread north to southern areas of the Hudson Bay Lowland; abundant populations in wetlands across southern and central Ontario.

Osmunda regalis	Royal Fern	N	S5	G5	N5		7	-5	Widespread and locally common in ephemerally flooded swamps and wetland edges throughout much of southern and central Ontario (Cody and Britton 1989). Absent from the Hudson Bay Lowland (Riley 2003).

Ostrya virginiana	Ironwood	N	S5	G5	N5		4	3	A widespread and locally common small tree of deciduous forests in southern Ontario north to southeastern Lake Superior. Absent from the north shore of Lake Superior, but occurring west of Lake Superior in Rainy River and southern Kenora District west to the Manitoba border (Little 1971).

Parthenocissus quinquefolia	Virginia Creeper	N	S4?	G5	N4?		6	3	Widespread but local in wooded areas (often swamps) in southern Ontario, north to the Ottawa District (Brunton 1985), Algonquin Park (Crins et al. 1998), and Simcoe County (where very rare and possibly only introduced, A.A. Reznicek pers. comm. April 2019). Although FNA Vol. 12 (2016) states that the species appears to be introduced in most, if not all, of its range in Canada and Soper and Heimburger (1982) consider it doubtfully native in Ontario, it is certainly native at many southern Ontario locations, though possibly an escape from cultivation at other sites particularly northward. Often found without flowers or fruit and very difficult to distinguish vegetatively from Parthenocissus vitacea which is more widespread and common in the province.

Parthenocissus vitacea	Thicket Creeper	N	S5	G5	N5		4	3	Widespread and common in a variety of habitats in southern and central Ontario and also occurring in southern parts of northwestern Ontario (Soper and Heimburger 1982).

Picea glauca	White Spruce	N	S5	G5	N5		6	3	A widespread and locally dominant forest tree throught most of the province. Uncommon in the Carolinian Zone where most populations are probably introduced (Oldham 2017). Widespread and abundant in most of central and northern Ontario including the Hudson Bay Lowland (Riley 2003).

Picea pungens	Blue Spruce	N	SNA	G5	NNA	SE1		3	Rare escape from cultivation or perhaps just persisting where planted. Not listed for Ontario by Morton and Venn (1990).

Pinus resinosa	Red Pine	N	S5	G5	N5		8	3	A common forest tree in central Ontario on dry rocky or sandy soils. Rare in the Carolinian Zone where most populations are probably introduced and ranging north to the southern Hudson Bay Lowland where rare and only known from the Albany River basin (Riley 2003).

Pinus strobus	Eastern White Pine	N	S5	G5	N5		4	3	Ontario's provincial tree species which is locally dominant and occurs throughout southern and central Ontario north to the north shore of Lake Superior in Thunder Bay District and west to the Manitoba border (Little 1971). Rare in the Hudson Bay Lowland where known only from the Albany River basin (Riley 2003).

Pinus sylvestris	Scots Pine	N	SNA	GNR	NNA	SE5		3	A widespread invasive exotic plant in southern Ontario. Considered the number 5 priority invasive alien plant of natural habitats in Canada by Catling and Mitrow (2005).

Plantago major	Common Plantain	N	SNA	G5	NNR	SE5		3	Widespread and locally common in disturbed habitats throughout much of the province. Although considered entirely introduced to Ontario in most sources (e.g. Morton and Venn 1990; Newmaster et al. 1998, Brouillet et al. 2010+), Plantago major is widespread and abundant in the Hudson Bay Lowland often in areas away from human habitation and is considered native there by Dutilly et al. (1954), Lepage (1951, 1966), Riley (2003), and others. Canadian distribution mapped by Bassett (1973).

Polygonatum pubescens	Hairy Solomon's Seal	N	S5	G5	N5		5	5	A widespread and locally common woodland herb in southern and central Ontario, north to Lake Timiskaming and Thunder Bay District (where rare; Thunder Bay Field Naturalists 2015), and west to the Lake of the Woods area on the Manitoba border (Cruise and Haber 1972, Scoggan 1978-1979).

Populus balsamifera	Balsam Poplar	N	S5	G5	NNR		4	-3	Widespread and locally common forest tree often in rich, moist ground such as floodplains and swamps; also on sandy shores, dunes, and interdunal hollows. Occurs province-wide.

Populus grandidentata	Large-toothed Aspen	N	S5	G5	N5		5	5	A locally common tree of sandy soils, especially in dry cutover and burned areas, clearings, savannas, and forests, often with oaks and pines (Reznicek et al. 2011). Widespread in southern and central Ontario, north to southeastern Lake Superior, though absent from most of the Lake Superior north shore and rare in Thunder Bay District (Thunder Bay Field Naturalists 2015). Also occurs west of Lake Superior in Rainy River and southern Kenora Districts (Farrar 1995).

Populus tremuloides	Trembling Aspen	N	S5	G5	N5		2	0	Widespread and locally common tree occurring almost province-wide, absent only from a narrow strip along Hudson Bay. Typical of swamps, with both conifers and hardwoods, but often on drier, even sandy sites; characteristically in clearings, after fire or logging (Reznicek et al. 2011).

Potentilla simplex	Old-field Cinquefoil	N	S5	G5	N5		3	3	Widespread and locally common in southern Ontario usually in dry open sandy forests; fields, roadsides, and sandy barren ground; also in moist thickets and deciduous forests, and on rocky ledges. Occurs north to Sudbury District (M.J. Oldham 25405, TRTE, in 2001).

Prunus pensylvanica	Pin Cherry	N	S5	G5	N5		3	3	Widespread and locally common in a variety of wooded and open habitats almost province-wide, north to southern and inland areas of the Hudson Bay Lowland (Soper and Heimburger 1982, Riley 2003).

Prunus serotina	Black Cherry	N	S5	G5	N5		3	3	Widespread forest tree in southern Ontario, mostly south of the Precambrian Shield, but also in southern areas of the Precambrian Shield, north to Algonquin Park, Manitoulin Island, and the Ottawa area (Fox and Soper 1953, Little 1971, Scoggan 1978-1979, Morton and Venn 2000). Disjunct in the Rainy River area of northwestern Ontario where first documented by Maycock et al. (1980).

Prunus virginiana	Chokecherry	N	S5	G5	N5		2	3	Widespread and locally common in a variety of wooded and open habitats over most of the province, north to the southern Hudson Bay Lowland (Soper and Heimburger 1982, Riley 2003).

Ranunculus acris	Common Buttercup	N	SNA	G5	NNA	SE5		0	A widespread and locally common Eurasian introduction of roadsides, fields, clearings, shores, and moist thickets, occurring throughout most of the province north to southern areas of the Hudson Bay Lowland (Riley 2003).

Ribes cynosbati	Eastern Prickly Gooseberry	N	S5	G5	N5		4	3	Widespread and locally common in southern Ontario north to Manitoulin Island and southern Algoma District (Soper and Heimburger 1982, Sinnott 1985).

Rubus idaeus	Red Raspberry	N	S5	G5	N5		2	3	Widespread and locally common nearly province-wide in open areas such as edges of woods, roadsides, thickets, clearings, and waste places (Soper and Heimburger 1982). Most plants are the native ssp. strigosus with ssp. idaeaus a rare garden escape in southern Ontario.
Rudbeckia triloba	Brown-eyed Susan	N	SNA	G5	NNA	SE4		3	Only variety in Ontario; see Rudbeckia triloba.
Salix	Willow Sp	N	SNA	N/A	N/A				

Salix bebbiana	Bebb's Willow	N	S5	G5	N5		4	-3	Bebb's Willow is one of the most widespread and common willow species in Ontario (Soper and Heimburger 1982) and is widespread in the Far North.
Salix discolor	Pussy Willow	N	S5	G5	N5		3	-3	Salix discolor is a widespread and locally common willow species in Ontario, reaching its northern range limits in the Far North.

Salix euxina	Crack Willow	N	SNA	GNR	NNA	SE		0	Listed for Ontario in FNA Vol. 7 (2010) but status in the province poorly known due to confusion with Salix x fragilis (formerly known as S. x rubens). See Belyaeva (2009).

Salix lucida	Shining Willow	N	S5	G5T5	N5		5	-3	A widespread wetland willow occurring almost province-wide, though absent from a few areas in the Hudson Bay Lowland (Soper and Heimburger 1982, Argus 1986, Riley 2003).

Salix petiolaris	Slender Willow	N	S5	G5	N5		3	-3	Widesprad and locally common wetland willow in southern and central Ontario, north to the Albany and Moose River basins in the southern Hudson Bay Lowland (Scoggan 1978-1979, Soper and Heimburger 1982, Riley 2003).

Silene vulgaris	Bladder Campion	N	SNA	GNR	NNA	SE5		5	A widespread and locally abundant Eurasian weed of roadsides and railroads, clearings and gravel pits, on dunes and gravelly shores, and in other disturbed places (Reznicek et al. 2011). Occurs throughout southern and central Ontario north to southern areas of the Hudson Bay Lowland (Riley 2003).

Symphyotrichum ericoides var. ericoides	White Heath Aster	N	S5	G5T5	N5		4	3	A widespread and locally common aster in southern Ontario in prairies, meadows, roadsides, railways, and old fields, ranging north locally to southern areas of northern Ontario, though absent from the Hudson Bay Lowland (Semple et al. 2002).

Symphyotrichum novae-angliae	New England Aster	N	S5	G5	N5		2	-3	Widespread and locally common aster of moist or dry open areas such as shorelines, meadows, prairies, and roadsides in southern and central Ontario, often somewhat weedy (Chmielewski and Semple 2003). Ranges north to the Sault Ste. Maria area (Semple et al. 2002) and has significantly increased its provincial distribution and abundance in the past several decades (D.F. Brunton pers. comm. 2020).

Symphyotrichum urophyllum	Arrow-leaved Aster	N	S4	G4G5	N4		6	5	Widespread and locally common in southern Ontario, particulary the Carolinian Zone (Semple et al. 2002, Oldham 2017), north to the southern Georgian Bay area and the Bruce Peninsula where rare and considered introduced by Johnson (2016). Absent from most of southeastern Ontario (Semple et al. 2002). Typically occurs in dry, open sandy or rocky ground, including fields, grassy roadsides, open woods, and alvars.

Syringa vulgaris	Common Lilac	N	SNA	GNR	NNA	SE5		5	Commonly planted Eurasian shrub escaping to roadsides, fencerows, clearings and fields, or persisting near old habitation. Widespread in southern Ontario north to the Ottawa District, sometimes locally invasive to alvars and woodlands.

Taraxacum officinale	Common Dandelion	N	SNA	G5	N5	SE5		3	A widespread and locally abundant Eurasian weed of lawns, roadsides, railroads, fields, dunes; forests, especially disturbed areas; often on dry sand or rock outcrops; occasionally in wet ground; meadows, river banks, shores (Reznicek et al. 2011). Occurs throughout southern and central Ontario north to the Hudson Bay Lowlands where it mainly occurs around human settlements as far north as Peawanuck, Kenora District, near the Hudson Bay coast (TRT; Stewart-Wade et al. 2002).

Thuja occidentalis	Eastern White Cedar	N	S5	G5	N5		4	-3	A widespread and locally dominant tree throughout most of Ontario from the Carolinian Zone to the southern Hudson Bay Lowland in moist, often calcareous habitats. Also occurs in dry sites such as limestone cliffs, sand dunes, and invading into old fields.

Tilia americana	Basswood	N	S5	G5	N5		4	3	A widespread forest tree usually in rich upland forests throughout much of southern and central Ontario north to southeastern Lake Superior, but absent from the north shore of Lake Superior (e.g. Thunder Bay District; Thunder Bay Field Naturalists 2015). Also in northwestern Ontario along Rainy River and the Lake of the Woods area.

Toxicodendron radicans	Poison Ivy	N	S5	G5	N5		2	0	A well-known, poisonous, low shrub (var. rydbergii) and climbing vine (var. radicans) of southern and central Ontario, north to the southern Hudson Bay Lowand. Widespread and locally abundant in southern Ontario, though generally uncommon to rare north of Lake Huron.

Trifolium pratense	Red Clover	N	SNA	GNR	NNA	SE5		3	Occurs in fields, roadsides, gravel pits, and other disturbed ground; invading shores, dunes, open forests, rocky openings, and moist habitats (Reznicek et al. 2011). Widespread and locally common throughout southern and central Ontario north to southern areas of the Hudson Bay Lowland (Riley 2003).

Trifolium repens	White Clover	N	SNA	GNR	NNA	SE5		3	A widespread and locally common introduced weed of roadsides, fields, lawns, and disturbed open ground. Occurs throughout southern and central Ontario (Turkington and Burdon 1983), but becoming less common northward to southern areas of the Hudson Bay Lowland (Riley 2003).

Typha angustifolia	Narrow-leaved Cattail	N	SNA	G5	N5	SE5		-5	Widespread and increasing wetland species in southern and central Ontario in ditches, ponds, and marshes. Occurs north to the north shore of Lake Superior and west to the Lake of the Woods area (Grace and Harrison 1986). Whether Typha angustifolia is native to North America is debated, with evidence on either side (e.g. Stuckey and Salamon 1987, Pederson et al. 2005, Shih and Finkelstein 2008, Ciotir et al. 2013, Ciotir and Freeland 2016). Considered introduced in Michigan by Reznicek et al. (2011) and in New England by Haines (2011), but native in New York by Werier (2017).

Typha latifolia	Broad-leaved Cattail	N	S5	G5	N5		1	-5	Widespread wetland plant virtually province-wide, though absent from northern areas of the Hudson Bay Lowland (Grace and Harrison 1986, Riley 2003). Although at least partly native (see Ciotir et al. 2013a, 2013b), this plant sometimes colonizes disturbed wetlands and behaves as an invasive species (see Apfelbaum 1985, Freeland et al. 2013, Shih and Finkelstein 2008, Small and Catling 2001b).

Ulmus americana	White Elm	N	S5	G4	N5		3	-3	A widespread tree in southern and central Ontario north to the Lake Nipigon area and disjunct to bottomlands along the Kenogami River in the southern Hudson Bay Lowland, where Riley (2003) speculated it was possibly a relict from the period of warmer postglacial climates. Occurs primarily in moist areas such as swamps and floodplains but sometimes in upland woods; also an important early successional tree species. Dutch elm disease has killed many trees throughout the province; the disease is caused by an ascomycete fungus, Ophiostoma ulmi, spores of which are carried by both native and introduced bark beetles and enter healthy tissue via wounds caused by feeding of the beetles on young shoots (Reznicek et al. 2011). Dutch elm disease was first found in Canada in 1944 in Quebec, then in 1946 in Ontario, and spread rapidly across southern Ontario (Davidson 1967).

Verbascum thapsus	Common Mullein	N	SNA	GNR	NNA	SE5		5	A common and widespread European introduction along roadsides, fields, and waste places in southern and central Ontario, north to Kapuskasing, Cochrane District, the north shore of Lake Superior, and west to the Manitoba border (Gross and Werner 1978, Scoggan 1978-1979); absent from the Hudson Bay Lowland (Riley 2003).

Vicia cracca	Cow Vetch	N	SNA	GNR	NNA	SE5		5	Widespread in disturbed situations thoughtout much of the provice, north to the Hudson Bay Lowland. According to the FNA draft (Broich 4 June 2014) Vicia cracca may or may not be native to North America, though it is generally considered non-native to Ontario (e.g. Morton and Venn 1990). Canadian distribution mapped by Aarssen et al. (1986).

Vinca minor	Lesser Periwinkle	N	SNA	GNR	NNA	SE5		5	A garden escape to roadsides, woodland edges, and disturbed woods in southern Ontario north to the Ottawa District (Scoggan 1978-1979). Sometimes invasive and spreading into woodlands and outcompeting native vegetation.
Viola odorata	English Violet	N	SNA	GNR	NNA	SE2		5	Eurasian; a garden-escape to lawns, roadsides and waste places in southern Ontario.

Vitis riparia	Riverbank Grape	N	S5	G5	N5		0	0	Widespread and common in southern and central Ontario in woodlands, thickets, river banks, and roadsides (Soper and Heimburger 1982). Also occurs in the southern part of northwestern Ontario in the Rainy River and Lake of the Woods area. Absent from Thunder Bay District and the Lake Superior area.

Breeding Bird List						
SCIENTIFIC NAME	**ENGLISH COMMON NAME**	**SAR**	**S RANK**	**G RANK**	**N RANK**	**S RANK REASONS**
Agelaius phoeniceus	Red-winged Blackbird	N	S5	G5	N5B,N5N	An abundant breeding species in southern Ontario, becoming uncommon to rare into the boreal forest. Common migrant and fairly common in southwestern Ontario in winter, becoming increasingly rare further north.
Ammodramus savannarum	Grasshopper Sparrow	Y	S4B	G5	N4N5B	An uncommon and declining breeding species of southern Ontario, primarily south of the Canadian Shield. Uncommon in migration within its range and occasional elsewhere.
Anas platyrhynchos	Mallard	N	S5	G5	N5B,N5N	Widespread, common and increasing breeding species throughout the province. Common migrant and common and expanding winter resident in southern Ontario.
Bombycilla cedrorum	Cedar Waxwing	N	S5	G5	N5B,N5N	A common migrant and breeding species throughout the province. Common winter resident in southern Ontario.
Bonasa umbellus	Ruffed Grouse	N	S5	G5	N5	A common breeding and year-round resident in most of the province; appears to be declining from southwestern Ontario.
Branta canadensis	Canada Goose	N	S5	G5	N5B,N5N	A common breeding species throughout its Ontario range. Increasing in the south.

Cardinalis cardinalis	Northern Cardinal	N	S5	G5	N5	A common year-round resident in southern Ontario, primarily south of the Canadian Shield. Increasing and spreading north.
Cathartes aura	Turkey Vulture	N	S5B,S3N	G5	N5B,N3N	A common and increasing species, expanding its breeding range north. Very common migrant throughout the province with the exception of the Hudson Bay lowlands where it is very rare. Very uncommon to rare in winter, but increasing in southwestern Ontario.
Charadrius vociferus	Killdeer	N	S4B	G5	N5B,N4N5N	A common but declining breeder throughout Ontario. Common in migration throughout the province.
Colaptes auratus	Northern Flicker	N	S5	G5	N5B,N5N	A common breeder throughout the proivnce; fairly common in southern Ontario in winter but absent or rare elsewhere.
Contopus virens	Eastern Wood-pewee	Y	S4B	G5	N4B	A common but declining breeder and migrant from the southern boreal south.
Corvus brachyrhynchos	American Crow	N	S5	G5	N5B,N5N	A common to abundant breeding species throughout the province. Very common migrant throughout the province. Winter resident in southern Ontario where very large aggregations may occurr.

Corvus corax	Common Raven	N	S5	G5	N5	A common breeding and permanent resident in most of Ontario. Formerly absent from south of the Canadian Shield but has greatly increased and now only rare in extreme southwestern Ontario.
Cyanocitta cristata	Blue Jay	N	S5	G5	N5	A common breeding and year-round resident throughout Ontario but absent from the Hudson Bay lowlands. Irrupts irregularly south in rsponse to mast crops.
Dryobates pubescens	Downy Woodpecker	N	S5	G5	N5	A common permanent resident over most of the province with the exception of most of the Hudson Bay lowlands.
Dumetella carolinensis	Gray Catbird	N	S5B,S3N	G5	N5B,N3N	A common breeder and migrant from the southern boreal south, most common in southern Ontario. Rare in winter in southern Ontario.
Falco sparverius	American Kestrel	N	S4	G5	N5B,N1N,N5M	A common to uncommon breeder throughout the province. Common in migration throughout and uncommon winter resident in southern Ontario. Appears to be declining, especially in southern Ontario.
Geothlypis trichas	Common Yellowthroat	N	S5B,S3N	G5	N5B,N3N	A common to abundant breeder and migrant the province. Rare to uncommon in extreme southern Ontairo in winter.
Icterus galbula	Baltimore Oriole	N	S4B	G5	N5B	An abundant breeding species in southern Ontario, becoming uncommon to rare and local in the north. Fairly common migrant throughout its range.

Meleagris gallopavo	Wild Turkey	N	S5	G5	N5	Extirpated from Ontario in the early 1900s, release programs involving American birds begun in the 1980s have been very succesful. The species is now common outside of its formerly native range north to Sudbury.
Melospiza melodia	Song Sparrow	N	S5	G5	N5B,N5N	A common to abundant, and widespread breeding species and migrant throughout the province. Fairly common in migration in southern Ontario.
Molothrus ater	Brown-headed Cowbird	N	S5	G5	N5B,N5N	An common breeding species in southern Ontario. Common migrant and fairly common in southwestern Ontario in winter, becoming increasingly rare further north.
Passerina cyanea	Indigo Bunting	N	S5B	G5	N5B	A common migrant and breeder from the southern boreal south.
Pheucticus ludovicianus	Rose-breasted Grosbeak	N	S5B	G5	N5B	A common migrant and breeder from the southern boreal south.
Poecile atricapillus	Black-capped Chickadee	N	S5	G5	N5	A common permanent resident throughout Ontario, but absent from the northern Hudson Bay lowlands.
Quiscalus quiscula	Common Grackle	N	S5	G5	N5B,N5N	A common to abundant breeding species throughout the province but absent from the northern Hudson Bay lowlands. Common migrant throughout the province and fairly common to uncommon in winter in southern Ontario.

Riparia riparia	Bank Swallow	Y	S4B	G5	N4N5B,N5M	A common and widespread but declining breeding species throughout Ontario wherever suitable foraging and nesting sites occur.
Scolopax minor	American Woodcock	N	S4B	G5	N5B	A common breeding species throughout most of its Ontario range, although more sparsely distributed at the northern edge of its range. Appears to be declining.
Setophaga coronata	Yellow-rumped Warbler	N	S5B,S4N	G5	N5B,N4N	A common breeder throughout the province, but absent from extreme southwestern Ontario and most common from the southern edge of the Canadian Shield north. Common migrant throughout the province. Uncommon to rare in southern Ontario in winter.
Setophaga petechia	Yellow Warbler	N	S5B	G5	N5B	A common breeding species and migrant throughout the province, most abundant south of the Canadian Shield and on the Hudson Bay lowlands.
Setophaga ruticilla	American Redstart	N	S5B	G5	N5B	A common breeder and migrant south of the Hudson Bay lowlands. Within the the Hudson Bay lowlands fairly common along some of the major rivers feeding into James Bay.
Sialia sialis	Eastern Bluebird	N	S5B,S4N	G5	N5B,N4N	A fairly common breeding species throughout most of the province but absent from the Hudson Bay lowlands. Common migrant throughout the province; uncommon and increasing in southern Ontario in winter.

Spinus tristis	American Goldfinch	N	S5	G5	N5B,N5N	A common breeding species in the south, less common towards the north boreal forest. Common migrant within its breeding range and irregular in winter at northern half of range but common in winter in the south.
Spizella passerina	Chipping Sparrow	N	S5B,S3N	G5	N5B	A very common breeding and migrant species throughout the province. Rare in winter in southern Ontairo.
Spizella pusilla	Field Sparrow	N	S4B,S3N	G5	N4B	An uncommon to common but declining breeding species in southern Ontario, most common along the southern edge of the Canadian Shield. Uncommon to common migrant in southern Ontario and uncommon along Lake Erie in winter; rare elsewhere.
Sturnella magna	Eastern Meadowlark	Y	S4B,S3N	G5	N4B,NUM	A fairly common but declining breeder, primarily of southern Ontario but with scattered breeding birds throughout the southern two-thirds of the province. Breeding densities highest along the southern edge of the Canadian Shield.
Sturnus vulgaris	European Starling	N	SNA	G5	NNA	Exotic. Widespread and common breeding species throughout the province around human habitation (cities, towns, rural farmland). Signficant seasonal movement, especially of northern birds.

Toxostoma rufum	Brown Thrasher	N	S4B	G5	N5B	A common but declinging breeder and migrant from the southern boreal south, most common in southern Ontario. Occasional in winter in southern Ontario.
Troglodytes aedon	House Wren	N	S5B	G5	N5B	A common to very common breeding species and migrant of southern Ontario and the Rainy River area; fairly rare further north. Occasional in winter in southern Ontario.
Turdus migratorius	American Robin	N	S5	G5	N5B,N5N	A very common breeder and migrant throughout the province. Common winter resident in southern Ontario, becoming progressively more rare as one moves north onto the Canadian Shield.
Tyrannus tyrannus	Eastern Kingbird	N	S4B	G5	N5B	A common to abundant breeding species throughout most of southern Ontario, becoming uncommon in forested areas of its range. Has experienced long and short-term declines.
Vireo olivaceus	Red-eyed Vireo	N	S5B	G5	N5B,N5N	A common to abundant breeder throughout the province. Very common migrant.
Zenaida macroura	Mourning Dove	N	S5	G5	N5B,N5N	A common breeding species resident year-round throughout most of its Ontario range, although more sparsely distributed at the northern edge of its range which it retracts from in the winter.

Incidental Wildlife Observations						
SCIENTIFIC NAME	**ENGLISH COMMON NAME**	**SAR**	**S RANK**	**G RANK**	**N RANK**	**S RANK REASONS**
Canis latrans	Coyote	N	S5	G5	N5	A common and widespread species. More common in the open forests and agricultural areas of southern Ontario than in the north. Threats not well known, but judging from their history a species which can withstand heavy human persecution.
Eptesicus fuscus	Big Brown Bat	N	S4	G5	N5	A common species througout south and central Ontario with apparent ability to adapt to human changes to the environment.
Lasionycteris noctivagans	Silver-haired Bat	N	S4	G3G4	N5B,NUN,NUM	A species not well documented in Ontario, widely distributed but relatively scarce. Threats and trends poorly known although its utilization of trees as roosting sites and maternity colonies suggest that it could be sensitive to forestry practices that eliminate such trees.
Lasiurus borealis	Eastern Red Bat	N	S4	G3G4	N4B,NUM	A species that is not uncommon in southern Ontario (probably greater than 100 occurrences) but for which no population estimates exist. Threats and trends poorly known.
Myotis lucifugus	Little Brown Myotis	Y	S3	G3G4	N2N4B,NNRN,NNRM	A common and widespread species in Ontario. Threats and trends not well known but apparently stable with few known threats.
Odocoileus virginianus	White-tailed Deer	N	S5	G5	N5	A common and widespread species throughout southern and central Ontario. Severe winters and the maturation of forests threaten deer in the marginal habitat in the northern part of their range.

Perimyotis subflavus	Tricolored Bat	Y	S3?	G3G4	N1N2	A rare species in Ontario at the northernmost part of its distribution. Less than 20 occurrences verified within the last 20 years. Threats may include disturbances of the hibernacula although they appear to be less easily aroused than other species of bats. Population size and trends poorly known.
Sylvilagus floridanus	Eastern Cottontail	N	S5	G5	N5	A common and widespread species in southern Ontario. Threats and trends are poorly known.
Tamias striatus	Eastern Chipmunk	N	S5	G5	N5	A common and widespread species. Threats are not well known but presumably are few. Trends also not well known but the population is probably stable.

Appendix B

SAR Screening

Grey County Species at Risk Screening

Common Name	Scientific Name	Status	Site Potential
Bank Swallow	*Riparia riparia*	Threatened	Observed see discussion in report
Barn Swallow	*Hirundo rustica*	Special Concern	Observed see discussion in report
Black Tern	*Chlidonias niger*	Special Concern	None-no habitat
Bobolink	*Dolichonyx oryzivorus*	Threatened	None observed - potential habitat – see discussion in report
Canada Warbler	*Cardellina canadensis*	Special Concern	None observed – potential habitat – see discussion in report
Cerulean Warbler	*Setophaga cerulea*	Threatened	None observed – no habitat
Chimney Swift	*Chaetura pelagica*	Threatened	None observed – no habitat
Common Nighthawk	*Chordeiles minor*	Special Concern	None observed – potential habitat – see discussion in report
Eastern Meadowlark	*Sturnella magna*	Threatened	Observed see discussion in report
Eastern Whip-poor-will	*Anstrostomus vociferus*	Special Concern	None observed - no habitat
Eastern Wood-pewee	*Contopus virens*	Special Concern	Observed see discussion in report
Evening Grosbeak	*Coccothraustes vespertinus*	Special Concern	None observed – no habitat
Golden-winged Warbler	*Vermivora chrysoptera*	Special Concern	None observed – potential habitat – see discussion in report
Grasshopper Sparrow	*Ammodramus savannarum*	Special Concern	Observed see discussion in report
Henslow's Sparrow	*Ammodramus heslowii*	Endangered	None observed - no habitat
Least Bittern	*Ixobrychus exilis*	Threatened	None observed - no habitat
Loggerhead Shrike	*Lanius ludovicianus*	Endangered	None observed - no habitat
Louisiana Waterthrush	*Parkesia motacilla*	Threatened	None observed - no habitat
Olive-sided Flycatcher	*Contopus cooperi*	Special Concern	None observed -site outside of current observed range
Red-headed Woodpecker	*Melanerpes erythrocephalus*	Endangered	None observed – no nest cavities, no habitat

Wood Thrush	*Hylocichla mustelina*	Special Concern	None observed – potential habitat – see discussion in report
American Eel	*Anguilla rostrata*	Endangered	Limited potential to occur on adjacent lands – no recent observations in area – not further considered
Lake Chubsucker	*Erimyzon sucetta*	Endangered	None – no habitat
Lake Sturgeon	*Acipenser fulvescens*	Endangered	Limited potential to occur on adjacent lands – no recent observations in area – not further considered
Northern Brook Lamprey	*Ichthyomyzon fossor*	Special Concern	Documented in general area – see discussion in report
Northern Sunfish	*Lepomis peltastes*	Special Concern	Limited potential to occur on adjacent lands – no recent observations in area – not further considered
Redside Dace	*Clinostomas elongatus*	Endangered	None – no habitat
Shortnose Cisco	*Coregonus reighardi*	Endangered	None- no habitat
American Bumble Bee	*Bombus pensylvanicus*	Special Concern	Documented in general area – see discussion in report
Monarch	*Danaus plexippus*	Special Concern	None observed - limited habitat – see discussion in report
Mottled Duskywing	*Erynnis martialis*	Endangered	None observed - no documented observations in area
Nine-spotted Lady Beetle	*Coccinella novemnotata*	Endangered	None observed – outside current range - see discussion in report
Suckley's Cuckoo Bumble Bee	*Bombus sucleyi*	Endangered	None observed – outside current range - see discussion in report
Transverse Lady Beetle	*Coccinella trasversoguttata*	Endangered	None observed – outside current range - see discussion in report
West Virginia White	*Pieris virginiensis*	Special Concern	None observed – no documented observations in area
Yellow-banded Bumble Bee	*Bombus terricola*	Special Concern	None observed – outside current range - see discussion in report

Cougar	*Puma concolor*	Special Concern	None observed – not habitat
Eastern Red Bat	*Lasiurus borelais*	Endangered	Observed see discussion in report
Eastern Small-footed Myotis	*Myotis leibii*	Endangered	None observed – no habitat
Hoary Bat	*Lasiurus cinereus*	Endangered	Observed see discussion in report
Little Brown Myotis	*Myotis lucifugus*	Endangered	Observed see discussion in report
Northern Myotis	*Myotis septentrionalis*	Endangered	None observed
Silver-haired Bat	*Lasionycteris noctivagans*	Endangered	Observed see discussion in report
Tri-colored Bat	*Perimyotis subflavus*	Endangered	Observed see discussion in report
American Ginesing	*Panax quinquefolius*	Threatened	None observed - no habitat
American Hart's Tongue Fern	*Asplenium scolopendrium* var. *americanum*	Special Concern	None observed – no habitat
Black Ash	*Fraxinus nigra*	Endangered	None observed
Butternut	*Juglans cinera*	Endangered	Observed see discussion in report
Eastern Prairie Fringed-orchid	*Platanthera leucophaea*	Endangered	None observed - no habitat
Jefferson Salamander	*Ambystoma jeffersonianum*	Endangered	None observed – no habitat
Unisexual Ambystoma (Jefferson Salamander dependent)	*Ambystoma laterale-(2) jeffersonianum*	Endangered	None observed – no habitat
Blanding's Turtle	*Emydoidea blandingii*	Threatened	None observed – site outside observed range - no habitat
Butler's Gartersnake	*Thamnophis butleri*	Endangered	None observed – site outside observed range - no habitat
Eastern Hognose Snake	*Heterodon platirhinos*	Threatened	None observed – site outside observed range - no habitat
Eastern Ribbonsnake	*Thamnophis sauritus*	Special Concern	Documented observation in general area - none observed – outside current range – see discussion in report
Massasauga Rattlesnake	*Sistrurus catenatus*	Threatened	None observed – no habitat
Northern Map Turtle	*Graptemys geographica*	Special Concern	None observed – site outside observed range

Snapping Turtle	*Chelydra serpentina*	Special Concern	None observed – documented in general area- potential habitat on adjacent lands – see discussion in report
Spotted Turtle	*Clemmys guttata*	Endangered	None observed - no habitat

Appendix C

Significant Wildlife Screening

Significant Wildlife Habitat Criteria Schedules For Ecoregion 6E – SITE ANALYSIS

1.1 Seasonal Concentration Areas of Animals

Seasonal concentration areas are areas where wildlife species occur annually in aggregations at certain times of the year. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Examples of seasonal concentration areas include deer wintering areas, breeding bird colonies and hibernation sites for reptiles, amphibians and some mammals.

Wildlife Habitat	Wildlife Species	ELC Ecosite Codes	Habitat Criteria	Defining Criteria	Site Confirmation/ Comments
Waterfowl Stopover and Staging Areas (Terrestrial) Rationale: Habitat important to migrating waterfowl.	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl. Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” Any mixed species aggregations of 100 or more individuals required. The flooded field ecosite habitat plus a 100-300m radius area, dependant 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).	Not applicable
Waterfowl Stopover and Staging Areas (Aquatic) Rationale: Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	Ponds, marshes, lakes, bays, coastal inlets, and watercourses used during migration. Sewage treatment ponds and storm water ponds do not qualify as a SWH, however a reservoir managed as a large wetland or pond/lake does qualify. These habitats have an abundant food supply	Studies carried out and verified presence of: Aggregations of 100 or more of listed species for 7 days, results in > 700 waterfowl use days. Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH	No applicable

	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		(mostly aquatic invertebrates and vegetation in shallow water).	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).	
Shorebird Migratory Stopover Area Rationale: High quality shorebird stopover habitat is extremely rare and typically has a long history of use.	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird’s Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October. Sewage treatment ponds and storm water ponds do not qualify as a SWH.	Studies confirming: Presence of 3 or more of listed species and > 1000 shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number of shorebirds counted per day over the course of the fall or spring migration period) Whimbrel stop briefly (<24hrs) during spring migration, any site with >100 Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area cxlviii Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	Not applicable
Raptor Wintering Area	Rough-legged Hawk Red-tailed Hawk	Hawks/Owls:	The habitat provides a combination of fields and	Studies confirm the use of these habitats by:	Not applicable

Rationale: Sites used by multiple species, a high number of individuals and used annually are most significant	Northern Harrier American Kestrel Snowy Owl Special Concern: Short-eared Owl Bald Eagle	Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC. Upland: CUM; CUT; CUS; CUW. Bald Eagle: Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).	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 wind swept with limited snow depth or accumulation. Eagle sites have open water, large trees and snags available for roosting	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”	
Bat Hibernacula Rationale; Bat hibernacula are rare habitats in all Ontario landscapes.	Big Brown Bat Tri-coloured Bat	Bat Hibernacula may be found in these ecosites: CCR1 CCR2 CCA1 CCA2 (Note: buildings are not considered to be SWH)	Hibernacula may be found in caves, mine shafts, underground foundations and Karsts. Active mine sites should not be considered as SWH The locations of bat hibernacula are relatively poorly known.	All sites with confirmed hibernating bats are SWH. The habitat area includes a 200m radius around the entrance of the hibernaculum. 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”	Not applicable
Bat Maternity Colonies Rationale: Known locations of forested bat maternity colonies are extremely rare in all Ontario landscapes.	Big Brown Bat Silver-haired Bat	Maternity colonies considered SWH are found in forested Ecosites. All ELC Ecosites in ELC Community Series: FOD FOM SWD SWM	Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH). Maternity roosts are not found in caves and mines in Ontario. Maternity colonies located in Mature deciduous or mixed forest stands with >10/ha large diameter (>25cm dbh) wildlife trees Female Bats prefer wildlife tree (snags) in early stages	Maternity Colonies with confirmed use by; >10 Big Brown Bats >5 Adult Female Silver-haired Bats The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies. Evaluation methods for maternity colonies should be conducted following methods outlined in the	Possible Maternity Colonies within woodlands in northern portion of subject property.

			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	"Bats and Bat Habitats: Guidelines for Wind Power Projects".	
Bat Migratory Stopover Areas	Hoary Bat, Eastern Red Bat, Silver-haired Bat	No specific ELC types.			Possible Bat Migratory Stopover Areas within woodlands in northern portion of subject property.
Turtle Wintering Areas Rationale: Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle Special Concern: Northern Map Turtle Snapping Turtle	Snapping and Midland Painted Turtles; ELC Community Classes; SW, MA, OA and SA, ELC Community Series; FEO and BOO Northern Map Turtle; Open Water areas such as deeper rivers or streams and lakes with current can also be used as over-wintering habitat.	For most turtles, wintering areas are in the same general area as their core habitat. Water has to be deep enough not to freeze and have soft mud substrates. Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.	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.	Potential Turtle Wintering areas within Saugeen River.
Reptile Hibernaculum Rationale; Generally sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Snakes: Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Special Concern:	For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats. Observations or congregations of snakes on sunny warm days in the	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	Studies confirming: Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more	Not applicable

	Milksnake Eastern Ribbonsnake Lizard: Special Concern (Southern Shield population): Five-lined Skink	spring or fall is a good indicator. For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3	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.	snake spp. near potential hibernacula (eg. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct) Note: If there are Special Concern Species present, then site is SWH Note: Sites for hibernation possess specific habitat parameters (e.g. temperature, humidity, etc.) and consequently are used annually, often by many of the same individuals of a local population (i.e. strong hibernation site fidelity). Other critical life processes (e.g. mating) often take place in close proximity to hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH.	
Colonially - Nesting Bird Breeding Habitat (Bank and Cliff) Rationale: Historical use and number of nests in a colony make this habitat significant. An identified colony can be very important to local populations. All swallow population are declining in Ontario.	Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)	Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns. Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1	Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area. Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles. Does not include a licensed/permitted Mineral Aggregate Operation.	Studies confirming: 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”	Possible along Saugeen River banks.
Colonially - Nesting Bird Breeding Habitat (Tree/Shrubs) Rationale:	Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron	SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1	Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent	Studies confirming: Presence of 5 or more active nests of Great Blue Heron or other listed species.	Not applicable

Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.			vegetation may also be used. Most nests in trees are 11 to 15 m from ground, near the top of the tree.	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	
Colonially - Nesting Bird Breeding Habitat (Ground) Rationale; Colonies are important to local bird population, typically sites are only known colony in area and are used annually.	Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird	Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1;50,000 NTS map). Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird) MAM1 – 6; MAS1 – 3; CUM CUT CUS	Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas. Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.	Studies confirming: Presence of > 25 active nests for Herring Gulls or Ring-billed Gulls, >5 active nests for Common Tern or >2 active nests for Caspian Tern. Presence of 5 or more pairs for Brewer's Blackbird. Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant. The edge of the colony and a minimum 150m radius area of habitat, or the extent of the ELC ecosites containing the colony or any island <3.0ha with a colony is the SWH Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects".	Not applicable
Migratory Butterfly Stopover Areas	Painted Lady Red Admiral Special Concern Monarch	Combination of ELC Community Series; need to have present one	A butterfly stopover area will be a minimum of 10 ha in size with a combination	Studies confirm: The presence of Monarch Use Days (MUD) during	Not applicable

Rationale: Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.		Community Series from each landclass: Field: CUM CUT CUS Forest: FOC FOD FOM CUP Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.	of field and forest habitat present, and will be located within 5 km of Lake Ontario cxlix. 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	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.	
Landbird Migratory Stopover Areas Rationale: Sites with a high diversity of species as well as high numbers are most significant.	All migratory songbirds. Canadian Wildlife Service Ontario website: http://www.ec.gc.ca/nature/default.asp?lang=En&n=421B7A9D-1 All migrant raptors species: Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)	All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD	Woodlots need to be >10 ha in size and within 5 km of Lake Ontario. If multiple woodlands are located along the shoreline those Woodlands <2km from Lake Ontario are more significant Sites have a variety of habitats; forest, grassland and wetland complexes The largest sites are more significant. Woodlots and forest fragments are important habitats to migrating birds, these features located along the shore and located within 5km of Lake Ontario are Candidate SWH.	Studies confirm: Use of the habitat by >200 birds/day and with >35 spp with at least 10 bird spp. recorded on at least 5 different survey date. 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"	Not applicable
Deer Yarding Areas Rationale: Winter habitat for deer is considered to be	White-tailed Deer	Note: OMNRF to determine this habitat.	Deer yarding areas or winter concentration areas (yards) are	No Studies Required: Snow depth and temperature are	Not applicable

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.		ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC. Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT	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.	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.	

Deer Winter Congregation Areas Rationale: Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.	White-tailed Deer	All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD Conifer plantations much smaller than 50 ha may also be used.	Woodlots will typically be >100 ha in size. Woodlots <100ha may be considered as significant based on MNRF studies or assessment. Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands. If deer are constrained by snow depth refer to the Deer Yarding Area habitat within Table 1.1 of this Schedule. Large woodlots > 100ha and up to 1500 ha are known to be used annually by densities of deer that range from 0.1-1.5 deer/ha. Woodlots with high densities of deer due to artificial feeding are not significant.	Studies confirm: Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF. Use of the woodlot by white- tailed deer will be determined by MNRF, all woodlots exceeding the area criteria are significant, unless determined not to be significant by MNRF Studies should be completed during winter (Jan/Feb) when >20cm of snow is on the ground using aerial survey techniques , ground or road surveys. or a pellet count deer density survey.	Not applicable

1.2 Rare Vegetation Communities

Rare vegetation communities often contain rare species, particularly plants and small invertebrates, which depend on such habitats for their survival and cannot readily move to or find alternative habitats. When assessing rare vegetation communities, one of the most important criteria is the current representation of the community in the planning area based on its area relative to the total landscape or the number of examples within the planning area. There are a number of criterion used to define rare vegetation communities, however the NHIC uses a system that considers the provincial rank of a species or community type as a tool to prioritize protection efforts. These ranks are not legal designations but have been assigned using the best available scientific information, and follow a systematic ranking procedure developed by The Nature Conservancy (U.S.). The ranks are based on three factors: estimated number of occurrences, estimated community aerial extent, and estimated range of the community within the province:

S1 Extremely rare - usually 5 or fewer occurrences in the province, or very few remaining hectares.
S2 Very rare - usually between 5 and 20 occurrences in the province, or few remaining hectares.
S3 Rare to uncommon - usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with some extensive examples remaining.

The setting of criteria for significant wildlife habitat (SWH) has incorporated this ranking system into its process of determining rare vegetation communities and as such, a rare vegetation community is defined to include areas that contain a provincially rare vegetation community and/or areas that contain a vegetation community that is rare within the planning area.

Rare Vegetation Community	ELC Ecosite Code	Habitat Description	Detailed Information	Defining Criteria	Site Confirmation/ Comments

Cliffs and Talus Slopes Rationale: Cliffs and Talus Slopes are extremely rare habitats in Ontario.	Any ELC Ecosite within Community Series: TAO CLO TAS CLS TAT CLT	A Cliff is vertical to near vertical bedrock >3m in height. A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris	Most cliff and talus slopes occur along the Niagara Escarpment.	Confirm any ELC Vegetation Type for Cliffs or Talus Slopes	Not applicable
Sand Barren Rationale; Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry	ELC Ecosites: SBO1 SBS1 SBT1 Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always < 60%.	Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.	A sand barren area >0.5ha in size.	Confirm any ELC Vegetation Type for Sand Barrens Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Not applicable
Alvar Rationale; Alvars are extremely rare habitats in Ecosregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.	ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2 Five Alvar Indicator Species: *1)Carex crawei* *2)Panicum philadelphicum* *3)Eleocharis compressa* *4)Scutellaria parvula* *5)Trichostema brachiatum* These indicator species are very specific to Alvars within Ecoregion 6E	An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animals species. Vegetation cover varies from patchy to barren with a less than 60% tree cover.	An Alvar site > 0.5 ha in size.	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	Not applicable
Old Growth Forest Rationale;	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat	Field Studies will determine:	Not applicable

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.		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.	assuming 100 m buffer at edge of forest.	If dominant trees species of the 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 forest area containing the old growth characteristics.	
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.	Field studies confirm one or more of the Savannah indicator should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Not applicable
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.	Field studies confirm one or more of the Prairie indicator species should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used. Area of the ELC Ecosite is the SWH. Site must not be dominated by exotic or introduced species (<50% vegetative cover are exotic sp.).	Not applicable

Other Rare Vegetation Communities Rationale: Plant communities that often contain rare species which depend on the habitat for survival.	Provincially Rare S1, S2 and S3 vegetation communities. 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.	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community. Area of the ELC Vegetation Type polygon is the SWH.	Not applicable
1**.2.1 Specialized Habitat for Wildlife** **Some wildlife species require large areas of suitable habitat for their long-term survival. Many wildlife species require substantial areas of suitable habitat for successful breeding. Their populations decline when habitat becomes fragmented and reduced in size. Specialized habitat for wildlife is a community or diversity-based category, therefore, the more wildlife species a habitat contains, the more significant the habitat becomes to the planning area. The largest and least fragmented habitats within a planning area will support the most significant populations of wildlife.**					
Specialized Wildlife Habitat	**Wildlife Species**	**ELC Ecosite Codes**	**Habitat Criteria**	**Defining Criteria**	**Site Confirmation/ Comments**
Waterfowl Nesting Area Rationale; Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.	American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard	All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4 Note: includes adjacency to Provincially Significant Wetlands	A waterfowl nesting area extends 120 m from a wetland (> 0.5 ha) or a wetland (>0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (<0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur. Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests. Wood Ducks and Hooded Mergansers utilize large diameter trees (>40cm dbh) in woodlands for cavity nest sites. nesting habitat.	Studies confirmed: Presence of 3 or more nesting pairs for listed species excluding Mallards, or; Presence of 10 or more nesting pairs for listed species including Mallards. Any active nesting site of an American Black Duck is considered significant. Nesting studies should be completed during the spring breeding season (April - June). Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects” A field study confirming waterfowl nesting habitat will determine the boundary of the waterfowl nesting habitat for the SWH, this may be greater or less than 120 m from the wetland and will provide enough habitat for waterfowl to successfully nest.	Not applicable
Bald Eagle and Osprey Nesting, Foraging and Perching Habitat	Osprey Special Concern	ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC	Nests are associated with lakes, ponds, rivers or wetlands along forested	Studies confirm the use of these nests by:	No nests or observations of either species were documented during and

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.	Bald Eagle	directly adjacent to riparian areas – rivers, lakes, ponds and wetlands	shorelines, islands, or on structures over water. Osprey nests are usually at the top a tree whereas Bald Eagle nests are typically in super canopy trees in a notch within the tree's canopy. Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).	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 dependant 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"	site visit to the subject property.
Woodland Raptor Nesting Habitat	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk	May be found in all forested ELC Ecosites.	All natural or conifer plantation woodland/forest stands >30ha with	Studies confirm: Presence of 1 or more active nests from species	Not applicable

Rationale: Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Red-shouldered Hawk Barred Owl Broad-winged Hawk	May also be found in SWC, SWM, SWD and CUP3	>10ha of interior habitat. Interior habitat determined with a 200m buffer. Stick nests found in a variety of intermediate-aged to mature conifer, deciduous or mixed forests within tops or crotches of trees. Species such as Coopers hawk nest along forest edges sometimes on peninsulas or small off-shore islands. In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.	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.	
Turtle Nesting Areas Rationale; These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle Special Concern Species Northern Map Turtle Snapping Turtle	Exposed mineral soil (sand or gravel) areas adjacent (<100m) or within the following ELC Ecosites: MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 BOO1 FEO1	Best nesting habitat for turtles are close to water and away from roads and sites less prone to loss of eggs by predation from skunks, raccoons or other animals. For an area to function as a turtle- nesting area, it must provide sand and gravel that turtles are able to dig in and are located in open, sunny areas. Nesting areas on the sides of municipal or provincial road embankments and shoulders are not SWH. Sand and gravel beaches adjacent to undisturbed	Studies confirm: Presence of 5 or more nesting Midland Painted Turtles One or more Northern Map Turtle or Snapping Turtle nesting is a SWH. The area or collection of sites within an area of exposed mineral soils where the turtles nest, plus a radius of 30-100m around the nesting area dependant on slope, riparian vegetation and adjacent land use is the SWH. Travel routes from wetland to nesting area are to be	Potential along Saugeen River east of subject property.

			shallow weedy areas of marshes, lakes, and rivers are most frequently used.	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.	
Seeps and Springs Rationale; Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.	Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.	Seeps/Springs are areas where ground water comes to the surface. Often they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.	Any forested area (with <25% meadow/field/pasture) within the headwaters of a stream or river system. Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species.	Field Studies confirm: Presence of a site with 2 or more seeps/springs should be considered SWH. The area of a ELC forest ecosite or an ecoelement within ecosite containing the seeps/springs is the SWH. The protection of the recharge area considering the slope, vegetation, height of trees and groundwater condition need to be considered in delineation the habitat.	Not applicable
Amphibian Breeding Habitat (Woodland). Rationale: These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations	Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog	All Ecosites associated with these ELC Community Series;FOC FOM FOD SWC SWM SWD Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians	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.	Studies confirm; Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog species with Call Level Codes of 3. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the woodland/wetlands. The habitat is the wetland area plus a 230m radius of woodland area. If a	Present within woodlands north and south of subject property.

				wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.	
Amphibian Breeding Habitat (Wetlands) Rationale; Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	ELC Community Classes SW, MA, FE, BO, OA and SA. Typically these wetland ecosites will be isolated (>120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.	Wetlands>500m2 (about 25m diameter), supporting high species diversity are significant; some small or ephemeral habitats may not be identified on MNRF mapping and could be important amphibian breeding habitats. Presence of shrubs and logs increase significance of pond for some amphibian species because of available structure for calling, foraging, escape and concealment from predators. Bullfrogs require permanent water bodies with abundant emergent vegetation.	Studies confirm: Presence of breeding population of 1 or more of the listed newt/salamander species or 2 or more of the listed frog/toad species with at least 20 individuals (adults or eggs masses) or 2 or more of the listed frog/toad species with Call Level Codes of 3. or; Wetland with confirmed breeding Bullfrogs are significant. The ELC ecosite wetland area and the shoreline are the SWH. A combination of observational study and call count surveys will be required during the spring (March-June) when amphibians are concentrated around suitable breeding habitat within or near the wetlands. If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined in Table 1.4 of this Schedule.	Not applicable.
Woodland Area-Sensitive Bird Breeding Habitat Rationale: Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for	Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green 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.	Studies confirm: Presence of nesting or breeding pairs of 3 or more of the listed wildlife species. Note: any site with breeding Cerulean Warblers or Canada Warblers is to be considered SWH.	Not applicable

area sensitive interior forest song birds.	Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren Special Concern: Cerulean Warbler Canada Warbler			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”.	
1.3 Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species) **Habitats of Species of Conservation Concern include wildlife species that are listed as Special Concern or rare, that are declining, or are featured species. Habitats of Species of Conservation Concern do not include habitats of Endangered or Threatened species as identified by the Endangered Species Act 2007.**					
Wildlife	**Species**	**ELC Ecosite**	**Habitat Criteria**	**Defining Criteria**	**Site Confirmation/ Comments**
Marsh Breeding Bird Habitat Rationale; Wetlands for these bird species are typically productive and fairly rare in Southern Ontario landscapes.	American Bittern Virginia Rail Sora Common Moorhen American Coot Pied-billed Grebe Marsh Wren Sedge Wren Common Loon Sandhill Crane Green Heron Trumpeter Swan Special Concern: Black Tern Yellow Rail	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SAS1 SAM1 SAF1 FEO1 BOO1 For Green Heron: All SW, MA and CUM1 sites.	Nesting occurs in wetlands. All wetland habitat is to be considered as long as there is shallow water with emergent aquatic vegetation present. For Green Heron, habitat is at the edge of water such as sluggish streams, ponds and marshes sheltered by shrubs and trees. Less frequently, it may be found in upland shrubs or forest a considerable distance from water.	Studies confirm: Presence of 5 or more nesting pairs of Sedge Wren or Marsh Wren or or 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”	Not applicable
Open Country Bird Breeding Habitat Rationale; This wildlife habitat is declining throughout Ontario and North America. Species such as the Upland Sandpiper have declined significantly the	Upland Sandpiper Grasshopper Sparrow Vesper Sparrow Northern Harrier Savannah Sparrow Special Concern Short-eared Owl	CUM1 CUM2	Large grassland areas (includes natural and cultural fields and meadows) >30 ha Grasslands not Class 1 or 2 agricultural lands, and not being actively used for farming (i.e. no row cropping or intensive hay	Field Studies confirm: Presence of nesting or breeding of 2 or more of the listed species. A field with 1 or more breeding Short-eared Owls is to be considered SWH. The area of SWH is the contiguous ELC ecosite field areas.	Not applicable

past 40 years based on CWS (2004) trend records.			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.	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”	
Shrub/Early Successional Bird Breeding Habitat Rationale; This wildlife habitat is declining throughout Ontario and North America. The Brown Thrasher has declined significantly over the past 40 years based on CWS (2004) trend records.	Indicator Spp: Brown Thrasher Clay-coloured Sparrow Common Spp. Field Sparrow Black-billed Cuckoo Eastern Towhee Willow Flycatcher Special Concern: Yellow-breasted Chat Golden-winged Warbler	CUT1 CUT2 CUS1 CUS2 CUW1 CUW2 Patches of shrub ecosites can be complexed into a larger habitat for some bird species	Large field areas succeeding to shrub and thicket habitats>10ha in size. Shrub land or early successional fields, not class 1 or 2 agricultural lands, not being actively used for farming (i.e. no row-cropping, haying or live-stock pasturing in the last 5 years). Shrub thicket habitats (>10 ha) are most likely to support and sustain a diversity of these species. Shrub and thicket habitat sites considered significant should have a history of longevity, either abandoned fields or pasturelands	Field Studies confirm: Presence of nesting or breeding of 1 of the indicator species and at least 2 of the common species. A habitat with breeding Yellow- breasted Chat or Golden-winged Warbler is to be considered as Significant Wildlife Habitat. The area of the SWH is the contiguous ELC ecosite field/thicket area. Conduct field investigations of the most likely areas in spring and early summer when birds are singing and defending their territories Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”	Not applicable
Terrestrial Crayfish Rationale: Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare. ccii	Chimney or Digger Crayfish; (Fallicambarus fodiens) Devil Crayfish or Meadow Crayfish; (Cambarus Diogenes)	MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.	Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish. Constructs burrows in marshes, mudflats, meadows, the ground can’t be too moist. Can often be found far from water. Both species are a semi-terrestrial burrower which	Studies Confirm: Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.	Not applicable

			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.	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.	
Special Concern and Rare Wildlife Species Rationale: These species are quite rare or have experienced significant population declines in Ontario.	All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.	All plant and animal element occurrences (EO) within a 1 or 10km grid. Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy	When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites.	Studies Confirm: Assessment/inventory of the site for the identified special concern or rare species needs to be completed during the time of year when the species is present or easily identifiable. The area of the habitat to the finest ELC scale that protects the habitat form and function is the SWH, this must be delineated through detailed field studies. The habitat needs be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.	Discussed within report.

1.4 Animal Movement Corridors

Animal Movement Corridors are elongated areas used by wildlife to move from one habitat to another. They are important to ensure genetic diversity in populations, to allow seasonal migration of animals (e.g. deer moving from summer to winter range) and to allow animals to move throughout their home range from feeding areas to cover areas. Animal movement corridors function at different scales often related to the size and home range of the animal. For example, short, narrow areas of natural habitat may function as a corridor between amphibian breeding areas and their summer range, while wider, longer corridors are needed to allow deer to travel from their winter habitat to their summer habitat.

Identifying the most important corridors that provide connectivity across the landscape is challenging because of a lack of specific information on animal movements. There is also some uncertainty about the optimum width and mortality risks of corridors. Furthermore, a corridor may be beneficial for some species but detrimental to others. For example, narrow linear corridors may allow increased access for racoons, cats, and other predators. Also, narrow corridors dominated by edge habitat may encourage invasion by weedy generalist plants and opportunistic species of birds and mammals. Corridors often consist of naturally vegetated areas that run through more open or developed landscapes. However, sparsely vegetated areas can also function as corridors. For example, many species move freely through agricultural land to reach natural areas. Despite the difficulty of identifying exact movement corridors for all species, these landscape features are important to the long-term viability of certain wildlife populations.

Animal Movement Corridors should only be identified as SWH where a Confirmed or Candidate SWH has been identified by MNRF or the planning authority based on documented evidence of a habitat identified within these Criterion Schedules or the Significant Wildlife Habitat Technical Guide. The identified wildlife habitats will have distinct passageways or rely on well defined natural features for movements between habitats required by the species to complete its life cycle.

Habitat	Species	ELC Eco-sites	Habitat Criteria	Defining Criteria	**Site Confirmation/ Comments**
Amphibian Movement Corridors Rationale; Movement corridors for amphibians moving from their terrestrial habitat to breeding habitat can be extremely important for local populations.	Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog	Corridors may be found in all ecosites associated with water. Corridors will be determined based on identifying the significant breeding habitat for these species in Table 1.1	Movement corridors between breeding habitat and summer habitat. Movement corridors must be determined when Amphibian breeding habitat is confirmed as SWH from Table 1.2 (Amphibian Breeding Habitat –Wetland) of this Schedule.	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.	Potential presence in woodlands north and south of site in association with wetlands.
Deer Movement Corridors Rationale: Corridors important for all species to be able to access seasonally important life-cycle habitats or to access new habitat for dispersing individuals by minimizing their vulnerability while travelling.	White-tailed Deer	Corridors may be found in all forested ecosites. A Project Proposal in Stratum II Deer Wintering Area has potential to contain corridors.	Movement corridor must be determined when Deer Wintering Habitat is confirmed as SWH from Table 1.1 of this schedule. A deer wintering habitat identified by the OMNRF as SWH in Table 1.1 of this Schedule will have corridors that the deer use during fall migration and spring dispersion. Corridors typically follow riparian areas, woodlots, areas of physical geography (ravines, or ridges).	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.	Not applicable
1.5 Exceptions for EcoRegion 6E					

Exceptions are candidate wildlife habitats that will have different criteria than what is proposed in the above schedules for an area within the Eco-region. The Exceptions will be based on Eco-Districts and municipalities can apply the exception for the eco-district within their planning area					
EcoDistrict and Wildlife Habitat/Species	Ecosites	Habitat Description	Habitat Criteria and Information	Defining Criteria	
6E-14 Rationale: The Bruce Peninsula has an isolated and distinct population of black bears. Maintenance of large woodland tracts with mast- producing tree species is important for bears. Mast Producing Areas Black Bear	All Forested habitat represented by ELC Community Series: FOM FOD	Black bears require forested habitat that provides cover, winter hibernation sites, and mast- producing tree species. Forested habitats need to be large enough to provide cover and protection for black bears.	Woodland ecosites >30ha with mast-producing tree species, either soft (cherry) or hard (oak and beech),	All woodlands > 30 ha with a 50% composition of these ELC Vegetation Types are considered significant: FOM1-1 FOM2-1 FOM3-1 FOD1-1 FOD1-2 FOD2-1 FOD2-2 FOD2-3 FOD2-4 FOD4-1 FOD5-2 FOD5-3 FOD5-7 FOD6-5	Not applicable
6E- 17 Rationale: Sharp-tailed grouse only occur on Manitoulin Island in Eco-region 6E, Leks are an important habitat to maintain their population Lek Sharp-tailed Grouse	CUM CUS CUT	The lek or dancing ground consists of bare, grassy or sparse shrubland. There is often a hill or rise in topography. Leks are typically a grassy field/meadow >15ha with adjacent shrublands and >30ha with adjacent deciduous woodland. Conifer trees within 500m are not tolerated.	Grasslands (field/meadow) are to be >15ha when adjacent to shrubland and >30ha when adjacent to deciduous woodland. Grasslands are to be undisturbed with low intensities of agriculture (light grazing or late haying) Leks will be used annually if not destroyed by cultivation or invasion by woody plants or tree planting.	Studies confirming lek habitat are to be completed from late March to June. Any site confirmed with sharp-tailed grouse courtship activities is considered significant. The field/meadow ELC ecosites plus a 200 m radius area with shrub or deciduous woodland is the lek habitat.	Not applicable