

Prepared By:



# Eng Soil Mixing Facility Environmental Impact Study

Project No. 02-002-2018

December 30, 2021

23 HERRELL AVENUE, BARRIE ON L4N 6T5  
[WWW.BIRKSNHC.CA](http://WWW.BIRKSNHC.CA)



23 Herrell Avenue  
Barrie, Ontario  
L4N 6T5

December 30, 2021

Mr. Henry and Jason Eng  
2 Campbell Drive, Suite 647  
Uxbridge, Ontario  
L9P 0A3

**RE: Environmental Impact Study for Active Soil Mixing Facility  
Part of Lot 14, Concession 3, Town of Uxbridge, Region of Durham**

Dear Mr. Eng:

Thank you for retaining Birks Natural Heritage Consultants, Inc. (Birks NHC) to prepare an Environmental Impact Study (EIS) for the lands located at Part of Lot 14, Concession 3 in Town of Uxbridge and the Region of Durham. It is our understanding that an EIS is required by the Town of Uxbridge (the Town) and the Region of Durham (the Region) as part of a submission package to alter the zoning for the property. The zoning is intended to be changed from Rural (RU) to Rural Exception XXX (RU-XXX) which will allow for the soil mixing facility to continue operations in compliance with the Town and Region Official Plans and Zoning By-law.

Site specific data was collected by Birks NHC staff during the 2018 field season and a site meeting was arranged with Lake Simcoe Region Conservation Authority staff to coordinate the scope of an EIS report. The assessment of the field data, background information, and applicable policies and regulations resulted in the identification of natural heritage features and functions present in the area. Specifically, the presence of the Pefferlaw-Udora Provincially Significant Wetland Complex and inherent functions which requires some mitigative protection.



If you have any questions or concerns regarding this report, please do not hesitate to contact the undersigned.

Birks Natural Heritage Consultants Inc.

Brad Baker, H.B.Sc.

Ecologist



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- Appendix C: Woodland Assessment
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## 1 INTRODUCTION

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Birks Natural Heritage Consultants, Inc. (Birks NHC) was retained by Mr. Henry and Jason Eng (the property owners) to undertake an Environmental Impact Study (EIS) for the lands identified as Part of Lot 14, Concession 3 (the property) in Town of Uxbridge (the Town) and the Region of Durham (the Region) also identified as 10850 Concession 4 in Zephyr, Ontario.

### 1.1 PURPOSE

The property is located within a rural area of the Town of Uxbridge. The majority of the property is dominated by agricultural land (Figure 1). It is our understanding that a change in zoning for the property is required to allow the soil mixing facility to continue operation in compliance with the Town and Region Official Plans and Zoning By-laws. We understand that the soil mixing facility has been active in this location for more than 10 years. This EIS will be required to demonstrate that the continued operation of the soil mixing facility will not result in any adverse effects to important Natural Heritage Features or their functions.

### 1.2 STUDY AREA

For the purpose of this EIS, the study area is focused on an area approximately 120 metres (m) surrounding the soil mixing facility as illustrated in Figure 1. The Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNR) published the Natural Heritage Reference Manual (MNR, 2010) to provide technical guidance for the implementation of the natural heritage policies of the Provincial Policy Statement, 2020 (PPS) which outlines a distance of 120 metres for use in consideration of impacts to adjacent features. To allow for the consideration of any other natural heritage features in the area a landscape level screening was also undertaken through a review of air photos within approximately one kilometer surrounding the study area.

### 1.3 SITE DESCRIPTION

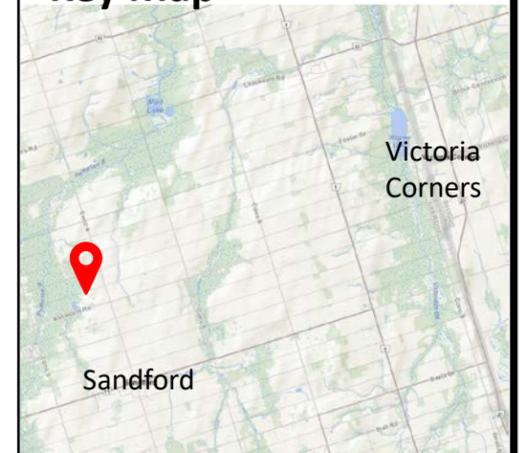
The property is divided roughly in half by the boundary of the Pefferlaw-Udora Provincially Significant Wetland (PSW) Complex. The east half of the property is largely dominated by agricultural lands (*i.e.*, active crops). The property is bounded by Concession Road 4 to the east. A residence and workshop are present directly adjacent to Concession Road 4 and a gravel access driveway runs along the south property boundary to provide access to the existing soil mixing facility. A small tributary of the Pefferlaw Brook enters the northeast agricultural area and a small naturalized area including pond and a portion of the Pefferlaw-Udora PSW Complex before it exits the property after approximately 300m. A remnant woodland is also present which effectively separates the soil mixing facility from the agricultural lands. The west half of the property is predominantly wetland which is included within the mapped boundary of the Pefferlaw-Udora PSW Complex. The Pefferlaw Brook also crosses the property within the boundary of the Pefferlaw-Udora PSW Complex approximately 150 meters from the soil mixing facility.



200 Meters

Scale is Approximate

### Key Map



Source: NHIC Make A Map –  
[www.gisapplication.lrc.gov.on.ca](http://www.gisapplication.lrc.gov.on.ca)

### Legend

-  Approximate Property Boundary
-  Study Area

# DRAFT

Source: Durham Region Maps – [geoapps.durham.ca](http://geoapps.durham.ca)



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Township of Uxbridge

**Figure 1**  
**Property Location**



#### 1.4 ADJACENT LAND USE

The adjacent land uses are analogous those present on the property. To the west, the land is primarily environmental protection associated with the Pefferlaw-Udora PSW Complex. Agricultural land use, however, is focused on both sides of Concession Road 4. Rural residences are associated with the agricultural land in addition to rural farm operations. The closest communities appear to be Mount Albert which is approximately 6 kilometers to the west or Zephyr, approximately 5 kilometers to the north.

## 2 ENVIRONMENTAL POLICY FRAMEWORK

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The following summarizes the planning policies and regulations related to natural heritage that apply for the purpose of the existing soil mixing facility.

### 2.1 PROVINCIAL POLICY STATEMENT, 2020

Ontario's *Planning Act* requires that planning decisions shall be consistent with the Provincial Policy Statement (PPS, 2020). Section 2.1 of the PPS specifies policy relates to protection of natural heritage features and functions.

Section 2.1.4 of the PPS stipulates policy for the protection of natural heritage features and functions as follows:

Development and site alteration shall not be permitted in:

- a) Significant wetlands in Ecoregions 5E, 6E; and 7E; and
- b) Significant coastal wetlands.

Section 2.1.5 of the PPS states that, unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions, development and site alteration shall not be permitted in:

- a) Significant woodlands in Ecoregions 6E; and 7E;
- b) Significant valleylands in Ecoregions 6E; and 7E;
- c) Significant wildlife habitat;
- d) Significant areas of natural and scientific interest; and
- e) Coastal wetlands in Ecoregions 5E, 6E; and 7E that are not subject to policy 2.1.4(b)

Sections 2.1.6 and 2.1.7 state that development and site alteration is not permitted in fish habitat or habitat of endangered and threatened species except in accordance with federal and provincial requirements.

Section 2.1.8 extends protection of those features defined above in policies 2.1.4, 2.1.5 and 2.1.6 to adjacent lands, typically those within 120 m of the potential impact. Section 2.1.8 states that



development and site alteration shall not be permitted on adjacent lands to natural heritage features identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological function.

While many of these features are mapped and direction is available to allow for candidate features and functions to be identified, it remains the responsibility of the Province and/or the Municipality to designate areas identified within Section 2.1.4 and 2.1.5 of the PPS as significant. The Natural Heritage Reference Manual (MNDMNRF, 2010) and Ecoregion 6E Significant Wildlife Habitat Criterion Schedule (MNDMNRF, 2015) were used within this report to identify candidate features and functions not currently identified by the province and/or municipality.

## **2.2 ENDANGERED SPECIES ACT, 2007**

Ontario's Endangered Species Act, 2007 (ESA) provides regulatory protection to Endangered and Threatened species, prohibiting harassment, harm and/or killing of individuals (Section 9) and destruction of their habitats (Section 10). Habitat of the species is defined as follows:

1. As the habitat features prescribed by Ontario Regulation (O. Reg.) 242/08 of the ESA, or,
2. Areas on which the species depends, directly or indirectly, to carry on its life processes, as described within reference documents (i.e. species status reports, technical reports, scientific articles) and based on internal data available from applicable agencies.

Ontario Regulation (O. Reg.) 230/08 of the ESA identifies Species at Risk in Ontario. These includes species listed as Extirpated, Endangered, Threatened, and Special Concern. As noted above, only species listed as Endangered and Threatened receive species and habitat protection through the ESA. Species designated as Special Concern may receive habitat protection under the Significant Wildlife Habitat provisions of the PPS. The ESA is regulated by the Ministry of Environment Conservation and Parks (MECP).

## **2.3 DURHAM REGION OFFICIAL PLAN (2020 OFFICE CONSOLIDATION)**

Section 2.3.17 states that outside of Urban Areas and Rural Settlements, an environmental impact study, in accordance with Policy 2.3.43, shall be required for any development or site alteration within 120 metres of a key natural heritage or hydrologic feature to identify a vegetation protection zone which:

- a. is of sufficient width to protect the feature and its functions from the impacts of the proposed change and associated activities that may occur before, during, and after, construction;
- b. where possible, will restore or enhance the feature and/or its function; and
- c. will maintain natural self-sustaining vegetation. The vegetation protection zone for wetlands, seepage areas and springs, fish habitat, permanent and intermittent streams, lakes, and significant woodlands, shall be a minimum of 30 metres wide, measured from the outside boundary of the feature.



## 2.4 TOWNSHIP OF UXBRIDGE OFFICIAL PLAN (JANUARY 2014 OFFICE CONSOLIDATION)

The Subject Property is outside of the planning area of the Township of Uxbridge Official Plan. As outlined in Sections 1.1.2 and 1.1.3 of that plan, the applicable policies of the Durham Region Official Plan apply to the Township of Uxbridge.

## 2.5 LAKE SIMCOE REGION CONSERVATION AUTHORITY

Wetlands present on the property are regulated by the LSRCA in accordance with O. Reg. 179/06 – Development, Interference with Wetlands and Alterations to Shorelines and Watercourses Regulation. Under O. Reg. 179/06, the LSRCA requires that approvals be obtained for any proposed development or site alteration within regulated areas. During the initial EIS work the LSRCA was included extensively in consultation due to their concerns related to potential impacts to the wetland features present on the property. Consultation with LSRCA included a site visit on October 2, 2018 to review the site conditions and the recommendations being put forward by Birks NHC ecologists.

# 3 STUDY APPROACH

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The following activities and assessments were undertaken to fulfill the objectives of this study.

## 3.1 DATA SOURCES

Background documents provide information on site characteristics, habitat, wildlife, rare species and communities, and other aspects of the study area. For the purpose of this EIS, the following sources were considered:

- Aerial images (Google);
- Atlas of the Breeding Birds of Ontario (Bird Studies Canada, 2006)];
- Natural Heritage Information Centre (MNDMNRF, 2021);
- Ontario Reptile and Amphibian Atlas (Ontario Nature, 2021)
- Species at Risk in Ontario List (MECP, 2018)

## 3.2 FIELD SURVEYS

Natural heritage features and functions within the study area were characterized through completion of field surveys. The following sections outline the methods used for each of the surveys, including specific provincial protocols utilized. Incidental wildlife, plant and habitat observations were considered during all surveys. Searches were also conducted to document the presence or absence of suitable habitat, based on habitat requirements of Threatened or Endangered species with habitat ranges overlapping the property.

### 3.2.1 Vegetation Community Mapping and Surveys

As a first step in identifying and assessing for natural heritage features on the property, the vegetation communities were assessed using Ecological Land Classification (ELC). The ecological community



boundaries were determined through a review of aerial photography and then further refined during the site visits throughout the 2018 field season. The ELC system for Southern Ontario (Lee *et al.*, 1998) was used with modifications. In early 2007, the MNDMNRF refined their original vegetation type codes to more fully encompass the vast range of natural and cultural communities across Southern Ontario. Through this process, new codes have been added while some have changed slightly. These updated ELC codes have also been used for reporting purposes in this study where they are more representative of the vegetation communities within the property. The resulting ELC Mapping is illustrated in Figure 2.

A field survey to collect vascular plant information was completed by Birks NHC ecologists on August 20, 2018.

The significance of the woodland units present on the property was assessed according to criteria defined by the Natural Heritage Reference Manual (OMNR, 2010).

### 3.2.2 Wildlife Surveys

A wildlife assessment for the property was completed through incidental observations while on site. Any incidental observations of wildlife were noted including other wildlife evidence such as dens, tracks, and scat. For each observation notes and, when possible, photos were taken. These observations also used in the consideration of the wildlife habitat function associated with the study area.

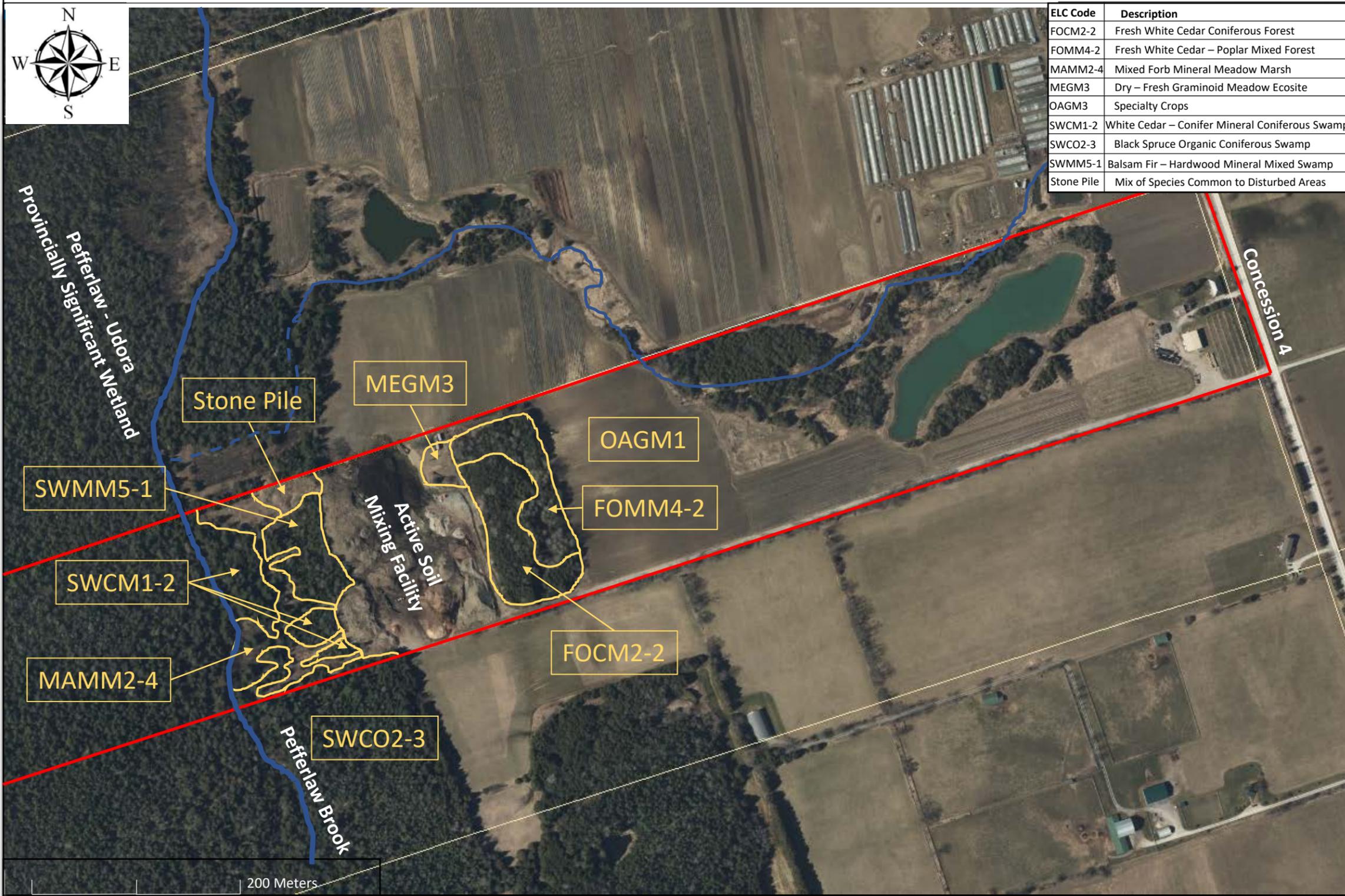
Wildlife habitat functions were evaluated according to provincial criteria outlined in the Ecoregion 6E Criterion Schedules (MNDMNRF, 2015).

## 3.3 SPECIES AT RISK

The Species at Risk assessment included an analysis of the habitat requirements of Species at Risk known to occur in the region to identify those having potential to occur within the study area. Birks NHC reviewed data obtained through desktop review and the site visit, related to potential habitat for provincially designated species, notably Species at Risk listed under O. Reg. 230/08 of the ESA as Threatened or Endangered. Where it is determined that the species have potential habitat within the study area, survey results were considered to determine the function of the potential habitat and whether the soil mixing facility can continue operations in compliance with regulations made under the ESA.

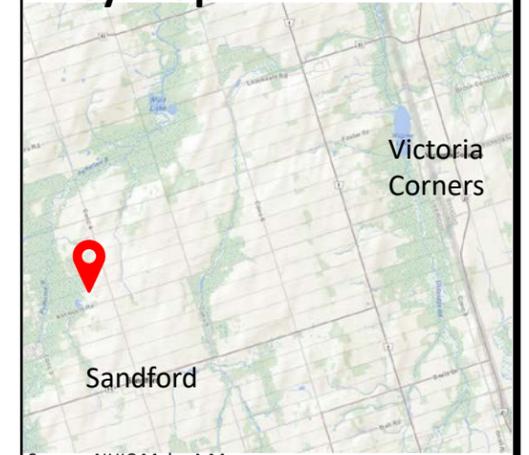


ELC Code	Description
FOCM2-2	Fresh White Cedar Coniferous Forest
FOMM4-2	Fresh White Cedar – Poplar Mixed Forest
MAMM2-4	Mixed Forb Mineral Meadow Marsh
MEGM3	Dry – Fresh Graminoid Meadow Ecosite
OAGM3	Specialty Crops
SWCM1-2	White Cedar – Conifer Mineral Coniferous Swamp
SWCO2-3	Black Spruce Organic Coniferous Swamp
SWMM5-1	Balsam Fir – Hardwood Mineral Mixed Swamp
Stone Pile	Mix of Species Common to Disturbed Areas



Scale is Approximate

### Key Map



Source: NHIC Make A Map – [www.gisapplication.lrc.gov.on.ca](http://www.gisapplication.lrc.gov.on.ca)

### Legend

- Approximate Property Boundary

# DRAFT

Source: Durham Region Maps – [geoapps.durham.ca](http://geoapps.durham.ca)



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**Figure 2**  
**Existing Conditions**



## 4 NATURAL HERITAGE FEATURES AND FUNCTIONS

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The following sections present an examination our findings as they relate to natural heritage features and functions in the study area.

### 4.1 VEGETATION COMMUNITIES AND PLANTS

#### 4.1.1 Vegetation Communities

Vegetation communities and their respective locations within the study area are illustrated on Figure 2. A total of eight vegetation communities were identified. The areas of interest within the study area are focused within two natural areas. These are identified as Woodland Area A (Figure 3) which is the location of a complex of wetland ELC communities, and the area identified as Woodland Area B (Figure 3) which is an upland forest community. Representative photos from the study area are included in Appendix A with locations illustrated on Figure 3.

Woodland Area A is a grouping of wetland communities dominated by young conifer and mixed swamp. The area appears to have been disturbed historically which has resulted in narrow areas of Meadow Marsh (MAMM2-4) crossing the treed swamp communities. Woodland Area A is dominated by three ecotypes including:

1. SWMM5-1: Balsam Fir – Hardwood Mineral Mixed Swamp

This community located centrally between the soil mixing facility and the Pefferlaw Brook was dominated by a mix of Balsam Fir and Black Spruce with a larger component of Trembling Aspen and Balsam Poplar than the surrounding areas. Because of the young age of the community, the trees were growing close together and the dense tree growth resulted in limited understory or ground cover.

2. SWCM1-2: White Cedar – Conifer Mineral Coniferous Swamp

This community, located adjacent to the Pefferlaw Brook corridor, is composed of a thick canopy of White Cedar interspersed with Tamarack, Black Spruce with Trembling Aspen and ash. Given the thickness of the canopy in the area there is very little understory although some dogwoods and willow were present where the canopy opened. Ground cover was similarly sparse but included wetland indicators such as Goldthread, and Sensitive Fern. Inclusions of this ecotype were also present within the SWMM5 1 community.

3. MAMM2-4: Mixed Forb Mineral Meadow Marsh

This community is composed a mixture of forbs and shrubs commonly associated with wetland communities. Large patches of Spotted Joe-pyeweed, Asters, and goldenrod made up the majority of the community. Smaller patches of Raspberry, Poison Ivy, Red-osier Dogwood and Bebb's Willow were also common throughout the community.



Woodland Area B is a transition forest community dominated by White Cedar. The northeast portion of the area includes a larger proportion of poplar which results in a different ecotype. Woodland Area A is dominated by two ecotypes including:

1. FOCM2-2: Fresh White Cedar Coniferous Forest

The Fresh White Cedar portion of Woodland Area B a typical cedar forest. Monoculture cedar has grown into a thick forest community which allows very little light to penetrate past the canopy and restricts the growth of understory or ground cover except along the edges and small gaps.

2. FOMM4-2: Fresh White Cedar – Poplar Mixed Forest

The northeast side of Woodland Area B includes a larger number of Trembling Aspen and White Birch that grow in small groups within the larger cedar growth. Ground cover and understory remain limited in this community with the deciduous trees extending their canopy beyond the thick cedar cover.

The Stone Pile Area is a location where deposition of debris including rocks, stumps and other material has occurred over a period of time. The area was colonized by vegetation species commonly associated with ditches and waste spaces and included a high proportion of invasive species including Japanese Knotweed and Black Locust.

#### 4.1.2 Vascular Plants

Vascular plants were considered through both the August and October site visits. A formal list has not been compiled for inclusion in this report, but can be provided upon request. No Species at Risk or provincially rare plant species were documented within the study area.

## 4.2 PROVINCIALY SIGNIFICANT WETLAND

It is our understanding that the boundary of the Pefferlaw-Udora PSW Complex was established on the property through staking and survey conducted in July 26, 2017 by MNDMNRF's Biologists (Aurora District). This correspondence is included in Appendix B. At the time of the assessment, the MNDMNRF biologist identified that the soil mixing facility had extended soil piles into the area previously acknowledged as the wetland boundary. Instead of re-evaluating that boundary, they recommended that the piled be moved out of the original wetland area and that the area should be restored.

The wetland delineation revealed two areas of wetland habitat on the property. The study area contains wetlands mapped as part of the Pefferlaw-Udora PSW Complex. The property also included wetland mapped as part of the Pefferlaw-Udora PSW Complex which was associated with the tributary to Pefferlaw Brook on the northeast portion of the property which would be considered adjacent for the purpose of this study. Wetlands on the property are dominated by coniferous and mixed swamp interspersed with meadow marsh as illustrated in Figure 2.



Scale is Approximate

### Key Map



Source: NHIC Make A Map –  
www.gisapplication.lrc.gov.on.ca

# ↓ Approximate Location for  
Photograph Number and  
Facing

# DRAFT

Source: NHIC Biodiversity Explorer



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**Figure 3**  
**Photo Locations**



### 4.3 WOODLAND

The significance of two woodland distinct woodland units associated with the property was assessed according to criteria defined by the Natural Heritage Reference Manual (MNDMNR, 2010). The large woodland unit associated with the west half of the property and the Pefferlaw-Udora PSW Complex (Woodland Area A) is assumed to meet all criteria to be considered significant woodland. The woodland assessment for the smaller woodland area present to the east of the soil mixing operation (Woodland Area B) is included in Appendix C of this report. As there is approximately 32.7% forest cover within the Pefferlaw River watershed (LSRCA 2012), a Significant Woodland must be at least 50ha in size. Woodland Area B potentially meets the Woodland Diversity criteria used for consideration for significance. Thus for the purpose of this assessment woodland significance will be considered as follows:

- Woodland Area A - Considered Significant Woodland – Meets all criteria.
- Woodland Area B – Meets one of eight criteria - Potentially significant on the basis of woodland diversity
  - Consists of Native tree species although very common on the landscape

### 4.4 SIGNIFICANT WILDLIFE HABITAT

As a part of this assessment, Birks NHC has reviewed the MNDMNR's Significant Wildlife Habitat Technical Guide (2000) and the accompanying Ecoregion 6E Criteria Schedules (MNDMNR, 2015) to assess the potential for Significant Wildlife Habitat to be present in the study area. The full assessment table is included as Appendix D. Based on that assessment, it was determined that the following candidate significant wildlife habitat functions may be associated with the property and adjacent lands:

- Seasonal Concentrations of Areas of Animals
  - Bat Maternity Colonies (Assumed) – Woodland Areas A and B
  - Reptile Hibernaculum (Assumed) – Woodland Area A
- Specialized Habitat for Wildlife
  - Amphibian Breeding Habitat (Woodland/Wetland) (Assumed) – Woodland Area A
  - Woodland Area Sensitive Breeding Bird Habitat (Assumed) – Woodland Area A
- Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)
  - Special Concern and Rare Wildlife
- Animal Movement Corridors

All functions noted above are directly linked to the presence of wetland habitat or the Woodland Area B on the property and adjacent lands. The assessment Table is included as Appendix D.

#### 4.4.1 Seasonal Concentration Areas of Animals

As outlined within the criteria for Significant Wildlife Habitat in Ecoregion 6E Schedules, Seasonal Concentration Areas are areas where wildlife species occur annually in numbers at certain times of the year, sometimes highly concentrated within relatively small areas. As a result, the loss of, or damage to, these features can result in a significant impact to populations.



#### Bat Maternity Colonies

In the study area, large snag trees within second growth forest communities including FOMM4-2 and SWMM5-1 may provide suitable roosting habitat for various bat species, other than Endangered bat species. This function is assumed to be present and no studies were undertaken to confirm the presence of the habitat function.

#### Reptile Hibernaculum

It is unclear if the property contains function for Reptile Hibernacula, however, based on the size of the property and the presence of the Pefferlaw-Udora PSW Complex to the west and appropriate studies were not undertaken to discount this function, it is assumed that this function is present on adjacent lands, specifically focused within the wetland complex. No suitable habitat areas were identified in Woodland Area B.

#### 4.4.2 Specialized Habitat for Wildlife

Specialized Habitat for Wildlife is a category which is intended to reflect the need of many wildlife species for substantial areas of suitable habitat for successful breeding. The populations of species included under this category are expected to decline when habitat becomes fragmented and reduced in size.

#### Amphibian Breeding (Woodland/Wetland)

Both wetland and woodland Amphibian Breeding habitat is focused around areas of water, either vernal pools and ponds within the forest, or those larger swamp and wetland communities that are features unto themselves. There was no evidence within Woodland Area B to suggest that this function is associated with that area. Woodland Area A, however, is mostly wetland habitat and is associated with the Pefferlaw Brook. Because there is some potential within Woodland Area A to support Amphibian Breeding this function is considered to be present within that area and adjacent lands for the purpose of this assessment.

#### Woodland Area-Sensitive Breeding Bird Habitat

Although there is not an abundance of interior habitat associated with the woodland present to the west of the study area, there are no modifications proposed to the forested area beyond restoration works along the edge which will increase the potential habitat availability. Woodland Area Sensitive Birds are present in the area and it is assumed that this function can be associated with the broader landscape area. Woodland Area Sensitive Breeding Bird Habitat generally requires that large mature trees, typically greater than 60 years in age are present in contiguous forest communities and is often limited in areas where large patches of forest have been removed to allow for settlement and farming. To provide this function, interior forest habitat needs to be at least 200m from the forest edge.



#### 4.4.3 Habitat for Species of Conservation Concern

Significant Wildlife Habitat is intended to protect large areas of habitat which are important for the long-term survival and success of species which are either quite rare in the Province or have experienced significant population decline. Habitat for Species of Conservation Concern are therefore considered Significant Wildlife Habitat on the basis that the wildlife species are listed as Special Concern or rare, or otherwise important species that are declining. According to the Significant Wildlife Habitat Technical Guide Ecoregion 6E Criteria Schedules (MNDMNR, 2015), habitat for Special Concern and Rare Species is characterized by the presence of any species considered provincially rare (ranked S1-S3) or designated Special Concern under the ESA.

#### Eastern Wood-pewee

This species is regularly associated with Deciduous or Mixed forests with little understory vegetation. While it lacks understory vegetation, the habitat present in Woodland Area A is young and thick which detracts from the potential value of the habitat. Notwithstanding, the species was heard calling to the west of Woodland Area A during the August 2018 site visit.

#### 4.4.4 Animal Movement Corridors

Animal Movement Corridors are considered important to ensure genetic diversity in populations. They are generally protected 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.

For the purpose of this assessment, amphibian corridors have to be considered because it is assumed that Woodland Area A provides some function for Amphibian Breeding. Based on the Natural Heritage Features and Functions identified in the study area, there is no reason to suspect that the area would provide any Movement corridor functions. The Pefferlaw-Udora PSW Complex is largely contiguous. The riparian area associated with the tributary of Pefferlaw Brook provides access to the wetland areas and pond present to the east of the study area.

### 4.5 AREAS OF NATURAL AND SCIENTIFIC INTEREST

No Areas of Natural and Scientific Interest are located in the study area.

### 4.6 FISH HABITAT

Fish habitat associated with the property is expected to be limited to the following features:

- Pefferlaw Brook is located over 100m from the west edge of the soil mixing facility; and,
- The watercourse (unnamed tributary of Pefferlaw Brook) which runs parallel to the property and meanders onto the property in proximity to the pond. This watercourse appears to become diffuse as it enters into the wetland to the west.



#### 4.7 HABITAT OF THREATENED AND ENDANGERED SPECIES

The habitat requirements of those species listed as Threatened and Endangered under the ESA were considered in relation to the habitat features noted within the study area and adjacent lands. The list in Table 1 below was scoped to include species for which suitable habitat is present and excluded those for which no habitat opportunities occur within the study area or are historical in nature (*i.e.*, greater than 40 years). Table 1 includes a summary of relevance to the study area.

#### 4.8 NATURAL HERITAGE FEATURES SUMMARY

The results of field surveys, review of background information and analysis indicate the potential for the candidate significant natural heritage features and functions to be located on or adjacent to the property. Our impact assessment will consider potential impacts only to features and functions summarized in Table 2.



Table 1: Species at Risk Assessment Summary

Common Name	Scientific Name	Designation <sup>1</sup>	Habitat Present Within Study Area
<i>Mammals</i>			
<sup>1</sup> Little Brown Myotis	<i>Myotis lucifugus</i>	Endangered	Yes – suitable forest communities present.
<sup>1</sup> Northern Myotis	<i>Myotis septentrionalis</i>	Endangered	Yes – suitable forest communities present.
<sup>1</sup> Tri-colored Bat	<i>Perimyotis subflavus</i>	Endangered	Yes – suitable forest communities present.
<i>Birds</i>			
<sup>1</sup> Barn Swallow	<i>Hirundo rustica</i>	Threatened	Potential – While suitable structures are present on the property no suitable habitat present in the study area.
<sup>1</sup> Bank Swallow	<i>Riparia riparia</i>	Threatened	Yes - Suitable habitat present within stockpiled soils in the study area. The species was not documented during field surveys in 2018.
<sup>1,2</sup> Bobolink	<i>Dolichonyx oryzivorus</i>	Threatened	Marginal – Potentially suitable habitat exists within the MEGM3 habitat. These species were not documented during field surveys in 2018. There is no expectation that contraventions of the ESA would result from the removal of the MEGM3 habitat as it relates to potential habitat for Bobolink or Eastern Meadowlark.
<sup>1</sup> Eastern Meadowlark	<i>Sturnella magna</i>	Threatened	
<i>Reptiles</i>			
<sup>1</sup> Blanding's Turtle	<i>Emydoidea blandingii</i>	Threatened	Yes – the species is expected to be present within the Pefferlaw-Udora PSW Complex. The species was not documented during field surveys in 2018.
<i>Vegetation</i>			
<sup>1</sup> Butternut	<i>Juglans cinerea</i>	Endangered	Yes - Naturalized portions of the property could support individuals of this species. The species was not documented during field surveys in 2018.
Source: (1) MECP SARO List, Birks NHC expertise; (2) <u>Designation Status</u> Provincial Status – Species at Risk in Ontario list maintained by the Ministry of Natural Resources and Forestry, O. Reg. 230/08. <i>Endangered Species Act</i> , 2007			



Table 2: Natural Heritage Features and Functions Summary

Natural Heritage Feature	Within Study Area	On the property or within 120 metres
<b>Provincially Significant Wetland</b>	Pefferlaw-Udora PSW Complex	Pefferlaw-Udora PSW Complex
<b>Significant Woodlands</b>	Woodland Area A would be considered Significant.  Woodland Area B is considered potentially Significant on the basis of the Woodland Diversity criteria.	No other woodland areas are considered to be adjacent for the purpose of this study.
<b>Significant Valleylands</b>	None Present	
<b>Significant Wildlife Habitat</b>	Potential: <ul style="list-style-type: none"> <li>• Bat Maternity Colonies – Woodland Area A and B</li> <li>• Reptile Hibernaculum – Woodland Area A</li> <li>• Amphibian Breeding – Woodland Area A</li> <li>• Habitat for Species of Conservation Concern – Eastern Wood-pewee – Woodland Area A</li> </ul>	Potential specifically within the Pefferlaw-Udora PSW Complex: <ul style="list-style-type: none"> <li>• Bat Maternity Colonies</li> <li>• Amphibian Breeding</li> <li>• Area-sensitive Breeding Bird Habitat – Woodland Area A &gt;200m from edge.</li> <li>• Habitat for Species of Conservation Concern</li> </ul>
<b>Provincial Areas of Natural and Scientific Interest</b>	None identified within 10 km on NHIC mapping	
<b>Fish Habitat</b>	Associated with the Pefferlaw Brook is present in Woodland Area A.  The unnamed tributary which runs adjacent to the north property boundary.	No additional fish habitat was identified in areas which would be considered adjacent.



Natural Heritage Feature	Within Study Area	On the property or within 120 metres
<b>Habitat of Threatened or Endangered Species</b>	<p>Expected to be present:</p> <ul style="list-style-type: none"> <li>Endangered Bat Species – potential roost habitat is present within forest and swamp communities present in the study area</li> </ul> <p>Potential:</p> <ul style="list-style-type: none"> <li>Bank Swallow – Could nest within soil piles located within the soil mixing facility.</li> <li>Blanding’s Turtle – Although no habitat features which would be considered general habitat were identified in the study area the species travels long distances overland which could result in incidental encounters.</li> <li>Bobolink or Eastern Meadowlark – Based on the condition of the MEGM3 habitat in the study area it is unlikely that these species would nest there.</li> <li>Barn Swallow – incidental encounters could occur.</li> </ul>	<p>Potential:</p> <ul style="list-style-type: none"> <li>Butternut – no Butternut were identified in the study area during the 2018 field season. They could still be present on the property outside of the study area.</li> </ul>

## 5 IMPACT ASSESSMENT

The intent of this study is to identify natural heritage features and functions associated with the property and determine if potential impacts could arise from the soil mixing facility. Because functions are generally grouped into features, impacts will be considered as they relate to the woodland specifically. For the purpose of this EIS impacts will be considered for two areas associated with the soil mixing facility, Woodland Area A and B, which are being considered inclusive of the functions outlined in Table 2.

### 5.1 SITE ACTIVITY

It is our understanding that the zoning is intended to be changed from Rural (RU) to Rural Exception (RU-XXX) which will allow for the soil mixing facility to continue operations in compliance with the Town and Region Official Plans and Zoning By-law. For the purpose of this assessment, impacts are considered on the assumption that the soil mixing facility would continue to operate as it was understood to be operating during the 2018 season. The existing soil mixing facility is located entirely outside of natural heritage features present in the area and proposed mitigation would restore any areas where encroachment has occurred in the past.



## 5.2 ASSESSMENT

The two woodlands and their associated functions make up the greater part of the natural heritage features and functions associated with the study area. Woodland A maintains the majority of the natural heritage function as laid out in Table 2. Direct removals of Significant Woodland and PSW or their buffer areas is not being considered to facilitate continued functioning of the soil mixing facility, therefore, no direct and/or indirect impacts to those features are expected to occur.

Intrinsically, there is no expectation that the continued operation of the soil mixing facility would result in negative impacts to the mapped natural heritage features or the wildlife habitat functions with potential to be present within this area. Nor is there significant concern that the activity will result in contraventions of the *ESA* or *Fisheries Act*. Mitigation has been recommended to ensure that this remains true.

## 5.3 DIRECT IMPACTS SUMMARY

Direct impacts are those that are immediately evident as a result of a development. Typically, the adverse effects of direct impacts are most evident during the site preparation and construction phase of a development. Based on our understanding of the activity, potential direct impacts would be limited to the small area of the property directly adjacent to the soil mixing facility. Impact that have occurred prior to this assessment are impossible to accurately quantify and thus mitigation is proposed to assist in offsetting potential historical impacts. The following points were important in the consideration of potential direct impacts and is intended as a summary:

- Direct Impact could occur through the removal of Natural Heritage Features, specifically associated with Woodland A and B, resulting in impacts to the capabilities of that feature to maintain identified functions including potential significant wildlife habitat, connectivity and protection of other features.
    - No new vegetation removal or areas of encroachment are proposed for either in any identified Natural Heritage Features.
    - No Significant wildlife habitat functions were associated with the active soil mixing facility area.
    - The soil mixing facility has not resulted in the placement of significant impervious surfaces nor are these proposed, instead the majority of the cleared area will remain as soil stockpiles or gravel access roads.
- Buffers and restoration are proposed to ensure that features contained within the woodlands are protected from the Soil Mixing Facility.
- Direct Impacts could occur through the introduction of sediments or soils to the Natural Heritage Features resulting from intentional or accidental placement of those materials.
    - Human influenced movement of sediments or soils should be directed through protective barriers. The placement of soil piles in proximity to the wetland edge has resulted in an increase in footprint. As the piles grow up, they extend outwards. The soil mixing facility would benefit from the creation of a barrier wall to define the



wetland boundary. This will ensure that no accidental encroachments occur in the future once the area to the west of the facility has been restored.

- Direct Impact could occur through the introduction of sediments or soils to the Natural Heritage Features carried by surface water flow.
  - Soil movement on the site appeared very limited within the Woodland Area A. With the exception of a small area of sedimentation where water was able to flow between two piles of material there was little evidence of accidental movement in this manner. Proposed mitigation outlined within Section 6 of this report is expected to be sufficient to control this potential impact.
- Direct Impact could occur through the intentional or accidental contraventions of Ontario's ESA.
  - The only species with habitat potential occurring within the soil mixing facility was Bank Swallow. While it was not identified in the study area during the 2018 field season, this species commonly nests in vertical faces left in soil stockpiles.
  - In addition, there are a number of species that are listed as potentially occurring in the area which could be encountered in the study area as an incidental encounter. Mitigation measures are proposed in Section 6 to ensure that no accidental encounters result in contraventions of the ESA.

#### 5.4 INDIRECT IMPACTS SUMMARY

Indirect impacts have potential to result following the completion of the proposed activity. Usually as a result of the project or human use of the project site following completion of the project, they also have a wider potential area of impact. The following points were important in the consideration of potential indirect impacts:

- Indirect impacts could occur through the intentional or accidental change in water availability.
  - The soil mixing facility is maintained as a gravel or soil surface. This means that there is unlikely to be a decrease in the infiltration of water into the ground which would then move downgradient into the wetland. Notwithstanding, it remains possible that the increase in activity on the site by heavy equipment could result in compaction of soils and a decrease in permeability. Mitigation measures are proposed in Section 6 to encourage the continued infiltration of surface water.
  - Indirect Impacts could occur through the introduction of foreign equipment, new activities or noise in proximity to the Natural Heritage Features.
  - The soil mixing facility has been active in this location for at several years and does not appear to function as a permanent source of noise and activity. Rather the trucks enter the site periodically to load or unload. As such, there is no expectation that the activity would result disturbance to the wildlife present in the Natural Heritage Features. While appears to be no immediate concern from a natural heritage perspective, we understand that a hydrogeological study is currently being prepared which will provide further assessment and direction to reduce potential impacts to water availability in adjacent wetland communities.



- Indirect impacts could result through the accidental discharge of contaminants such as fuel or oil when cleaning, fueling or servicing equipment.
  - Mitigation measures are proposed in Section 6 to encourage the appropriate equipment operations with respect to Natural Heritage.
- Indirect Impacts could result from the introduction of foreign equipment, new activities or noise in proximity to the natural heritage features.
  - Equipment like generators, night lighting, or constant use can reduce the potential function of some natural heritage features. Some wildlife is intolerant of unnatural lighting conditions or continuous noise. Further, if construction equipment coming from other sites is used without first being cleaned properly, invasive species transport can result to sensitive areas.
  - The proposed use is not expected to be active at night and the woodland is sufficiently large to allow wildlife functions identified to be potentially present to continue without impacts from the proposed changes.
  - Mitigation is included to ensure that no negative indirect impacts result from the introduction of foreign equipment, new activities or noise.
- Indirect impact could occur through the intentional or accidental contraventions of Ontario's ESA.
  - Indirect impact associated with Species at Risk in Ontario would be associated with killing or harming individuals of protected species during the use of the property. This would also be considered a contravention of the ESA.
  - If implemented correctly, proposed mitigation is expected to be sufficient to avoid accidental contraventions of the ESA.

## 6 RECOMMENDATIONS AND MITIGATION MEASURES

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Mitigation refers to the avoidance or reduction of impacts associated with the proposed activity through best management practices or other activities. As previously discussed, potential impacts were identified which could result to the natural heritage features and functions associated with the study area. Where applied correctly, mitigation is intended to reduce the potential for impacts to ensure that the natural heritage features and functions will continue uninhibited by the soil mixing facility development. Thus, mitigation would be required to ensure that there is no negative impact and the development can proceed in conformity with the relevant planning documents and in compliance with environmental law. The following mitigation measures should be incorporated into the plan.

### 6.1 SITE RESTORATION

Through the operation of the soil mixing facility, intentional or accidental, encroachment of soil stockpiles has occurred into the Pefferlaw-Udora PSW Complex. Figure 4 illustrates the approximate area of encroachment where rehabilitation would be beneficial. It is recommended that soil piles in this



area of encroachment be removed, and the area be replanted to encourage the regrowth of wetland communities similar to those present within Woodland Area A. This recommendation was initially provided by the MNDMNRF (Appendix B) and LSRCA staff. Through the site visit with the LSRCA which took place in October of 2018 it was reiterated that the movement of the stockpiles had begun but that movement of all material could take several years to complete. An appropriate timeline should be determined in cooperation with the review agencies understanding the technical limitations associated with the undertaking. The following recommendations are provided to assist in the restoration:

- Native species should be utilized for all plantings
- Trees and shrubs should be planted along the previously disturbed area to provide a starting point for the renaturalization of the area. Plantings should emulate a natural forest edge with smaller sized plant material at the front, and larger sized plant material along the existing wetland edge. Species to be planted would include White Cedar, (*Thuja occidentalis*), Eastern Hemlock (*Tsuga canadensis*), Trembling Aspen (*Populus tremuloides*), Black Spruce (*Picea mariana*), Red Osier Dogwood (*Cornus sericea*), Maple-leaf Viburnum (*Viburnum acerifolium*) and Choke Cherry (*Prunus virginiana*). Any substitution would use native species commonly found in the area.
- A suitable seed mix for wetland habitat would be beneficial in stabilizing the soil once the materials have been removed from the area.
- Piling of mulch at depths greater than 3 inches should be avoided as this can inhibit growth and regeneration.

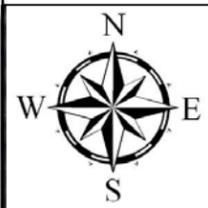
While the restoration in the area outlined in Figure 4 should be sufficient to offset any potential historical impacts a formal Edge Management and Restoration Plan may be required by the LSRCA as a condition of approval.

## 6.2 OPERATIONS

### 6.2.1 Materials and Equipment

No development activities (material and equipment storage, grading, equipment activity, etc.) should be permitted in the wetland areas. Equipment maintenance during and post construction should be undertaken in an appropriate area. Tool and vehicle maintenance and cleaning should be done away from the retained natural areas in a manner that does not encourage the movement of cleaning or maintenance products including cleaners, oils or fuel into the neighboring forested areas. Fuel and chemical storage should follow appropriate legislation to ensure that it is maintained and stored in a way that will not result in accidental release or spills to the neighboring forested areas, wetland or watercourses on the property.

Installation and maintenance of a barrier fence in the form of a block retaining wall is recommended adjacent to the wetland community is recommended following site restoration. It is our understanding that the property owner has access to large concrete blocks which would be suitable for placement



Provincially Significant Wetland  
Pefferlaw - Udora

Pefferlaw Brook



Scale is Approximate

### Key Map



Source: NHIC Make A Map –  
[www.gisapplication.lrc.gov.on.ca](http://www.gisapplication.lrc.gov.on.ca)

### Legend

-  Approximate Property Boundary
-  Proposed Rehabilitation Area
-  Storm Water Overflow Pond (Conceptual Alternatives)
-  Stone Retaining Walls (Conceptual Location)

# DRAFT

Source: Durham Region Maps – [geoapps.durham.ca](http://geoapps.durham.ca)



**Project: 02-002-2018**  
Eng Soil Mixing Facility  
Township of Uxbridge

**Figure 4**  
**Mitigation**



along both the east and west boundary of the soil mixing facility. The approximate location of the retaining walls is illustrated in Figure 4. The intent of this block wall is to define the boundary for the soil mixing facility and to ensure that no accidental sediment migration occurs into the adjacent wetland. The placement of blocks would also be expected to allow for the migration of shallow groundwater through to the wetland.

#### 6.2.2 Sediment and Erosion Control

At the time of any site works including removal of soil piles from the wetland and re establishment of wetland vegetation, an Erosion and Sediment Control Plan should be developed. The plan may include installation of geotextile silt fences, rock check dams, ditch checks, temporary sediment ponds, designated stockpile areas, and cut-off swales and ditches to divert surface flows to sediment control area. The extent and details of the plan should be determined based on the grading specific to the property. It is recommended that the property owner consider creating a settling pond to allow surface water to infiltrate into the ground in a manner that avoids transmission of sediments into the natural areas. Two potential areas for the location of this pond are outlined in Figure 4 although other feasible locations could be considered. The ground surface of the soil mixing facility could then be graded appropriately to ensure that surface flow from the active area of the soil mixing facility would be directed to that settling pond where sediments would be retained as the water infiltrates to the shallow groundwater table and eventually the wetland to the west.

### 6.3 SPECIES AT RISK

#### 6.3.1 General

Given the dynamic character of the natural environment, as well as changes to policy (*i.e.*, new species listing), consideration is recommended in the interpretation of potential presence of Threatened or Endangered species as protected under the ESA.

This report was produced based on the most up-to-date policy information, however, is not intended to act as a long-term assessment of potential Species at Risk. The ESA is recognized as being a 'proponent-driven' piece of legislation and therefore it is the responsibility of the landowner/developer to ensure compliance with the regulations made under this act. Should any of the species listed as Threatened or Endangered be encountered on the property it is recommended that a natural heritage ecologist or the Ministry of Environment Conservation and Parks (MECP) be consulted to determine the appropriate actions to avoid accidental contravention of the ESA. A review of the assessment provided within this report should be undertaken by a qualified Ecologist prior to construction on any resultant lots to ensure compliance with the ESA at that time.

All current Threatened or Endangered species listed under O. Reg. 230/08 with a currency date of August 1, 2018 (the most recent as of December 21, 2021) made under the ESA have been considered within this report.



### 6.3.2 Worker Training

Worker training could be beneficial to assist the on-site workers in the identification of the Species at Risk with potential to occur in the study area. Workers should be instructed to stop work immediately and contact the property owner or other appropriate representative immediately if any Species at Risk are encountered within the work area. Individuals working on site should ensure that Species at Risk are not harmed during construction or killed by heavy machinery, vehicles or other equipment.

The property owner should seek to ensure that all personnel are educated to ensure that, if identified, the individuals are not wantonly injured or killed, and to ensure that damage to features which could constitute habitat is avoided. Information conveyed through this education could include:

- Species habitat and identification
- Requirements under the ESA including avoidance of harm to the species and damage to relevant habitat
- Appropriate action to take if the species is encountered
- How to record sightings and encounters

The individual carrying out training should be a qualified biologist with appropriate knowledge of Species at Risk in Ontario.

## 6.4 AGENCY PERMITTING

A permit from the LSRCA is likely to be required for restoration works within the Pefferlaw-Udora PSW Complex as the area is regulated by O. Reg. 179/06.

## 7 POLICY CONFORMITY

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The policy framework, outlined within the PPS, the Region Official Plan are summarized in Section 2 of this report. Based on the evaluation for the property, and the length of time for which the soil mixing facility appears to have been active there is no expectation that continued operation would result in new negative impacts to natural heritage features or functions. Further, through the implementation of mitigation and restoration efforts a benefit could be achieved. While the restoration in the area outlined in Figure 4 should be sufficient to offset any potential historical impacts a formal Edge Management and Restoration Plan may be required by the LSRCA as a condition of approval. Thus, from a Natural Heritage perspective and following implementation of mitigation and restoration, the existing soil mixing facility appears to conform to the intent of the policies of the PPS and the Region Official Plan. Further, it is possible to be carried out in a manner that complies with the ESA and *Fisheries Act*.



## 8 CONCLUSIONS

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This EIS was prepared for the soil mixing facility currently being operated by Mr. Henry and Jason Eng on the lands identified as Part of Lot 14, Concession 3 in Town of Uxbridge. It is our understanding that a change in zoning for the property is required to allow the soil mixing facility to continue operation in compliance with municipal zoning by-laws. The intent of this assessment was to identify any potential ecological impacts which could result from the continued operation of the soil mixing facility.

The results of this EIS demonstrate that potential impacts to Significant Natural Heritage Features and the associated ecological functions within the study area by the continued operation of the soil mixing facility are minimal and mitigable. The mitigation measures recommended in this report are intended to allow the continued functioning of the soil mixing facility in manner that maintains the natural heritage present in the area and, where necessary, to reverse impacts that may have occurred prior to this assessment. Provided the mitigation measures recommended in this report are undertaken, the continued operation of the soil mixing facility will not impact any identified features negatively. Thus, from a natural heritage perspective, the soil mixing facility would conform with the Durham Region Official Plan and the Provincial Policy Statement and comply with the *ESA* and *Fisheries Act*.



## 9 REFERENCES

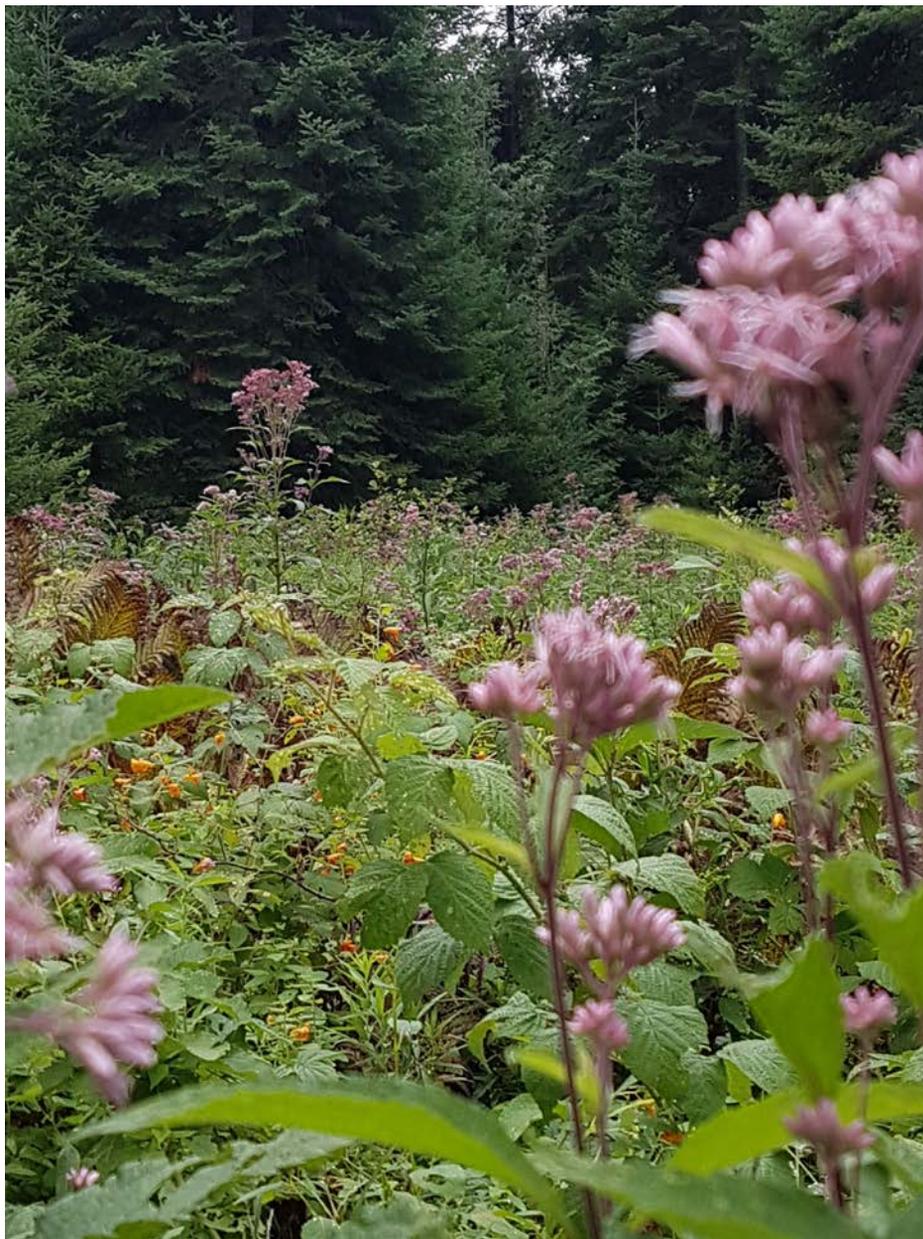
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## APPENDIX A

Representative Photos





**Photograph 1. Transition between Mixed Forb Mineral Meadow Marsh (MAMM2-4) and Balsam Fir – Hardwood Mineral Mixed Swamp (SWMM5-1) communities. (August 2018)**





**Photograph 2. Transition between Mixed Forb Mineral Meadow Marsh (MAMM2-4) and Balsam Fir – Hardwood Mineral Mixed Swamp (SWMM5-1) communities. (August 2018)**





**Photograph 3. Transition between Mixed Forb Mineral Meadow Marsh (MAMM2-4) and White Cedar – Conifer Mineral Coniferous Swamp (SWCM1-2) communities. (August 2018)**





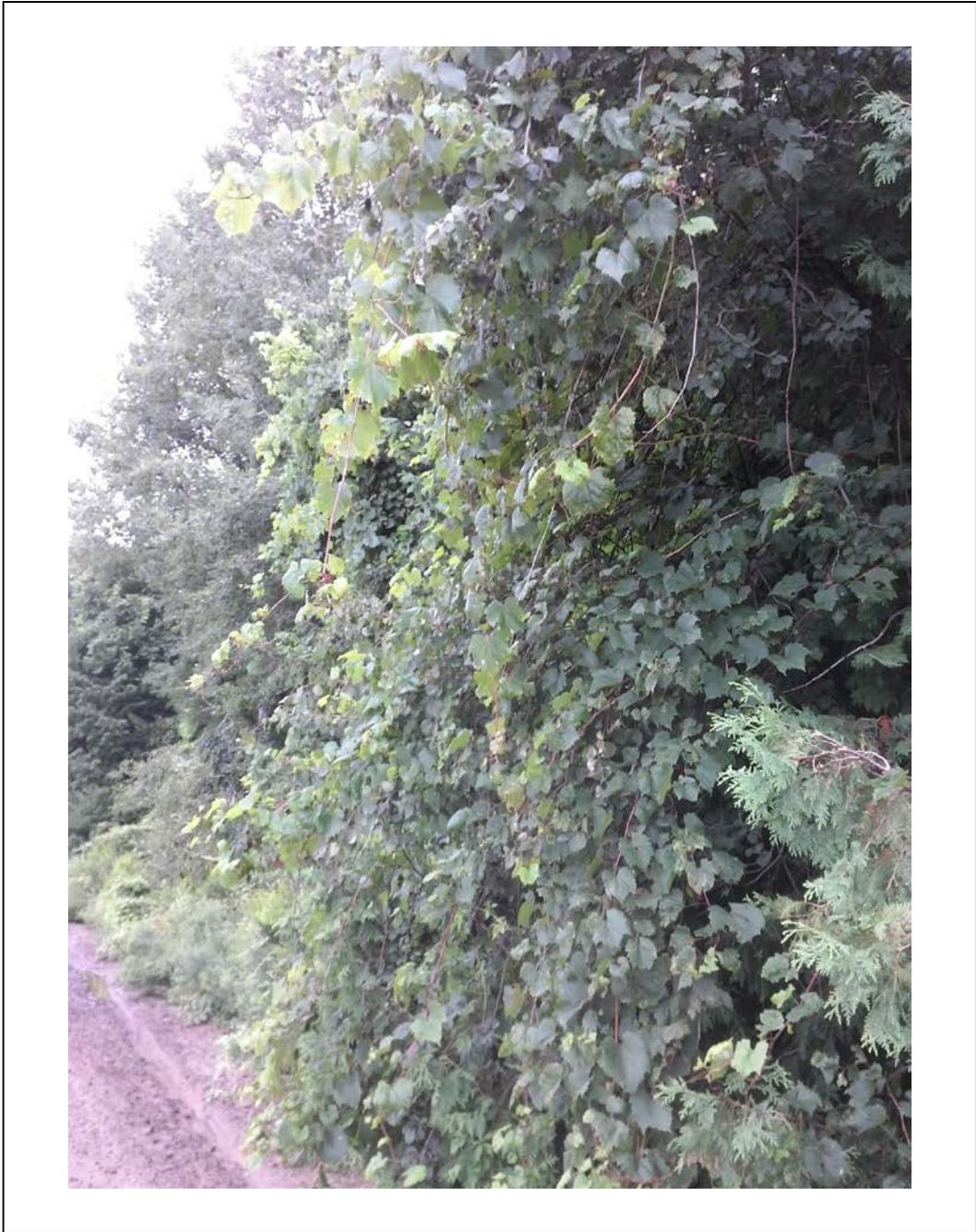
**Photograph 4. Transition point between Balsam Fir – Hardwood Mineral Mixed Swamp (SWMM5-1) community and Soil Mixing Facility.**





**Photograph 5. Transition between Soil Mixing Facility and the Fresh White Cedar Coniferous Forest (FOCM2-2) vegetation community associated with Woodland Area B. (August 2018)**





**Photograph 6. Transition between Active Agricultural Area (OAGM1) and the Fresh White Cedar – Poplar Mixed Forest (FOMM4-2) vegetation community associated with Woodland Area B. (August 2018)**





**Photograph 7. Soil Mixing Facility from the north side facing south. (August 2018)**



**Photograph 8. Soil Mixing Facility from the south side facing northwest. (August 2018)**



## **APPENDIX B**

MNDMNRF Wetland Boundary Information



**Ministry of Natural  
Resources and Forestry**

Aurora District Office  
50 Bloomington Road  
Aurora, Ontario L4G 0L8

**Ministère des Richesses  
naturelles et des Forêts**

Telephone: (905) 713-7400  
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February 27, 2018

**ATTENTION:**

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**SUBJECT:**

**Update to Wetland No. 8 and Addition of Wetland No. 42 in the Provincially Significant Pefferlaw-Udora Wetland Complex, 10850 Concession Road 4 (Parcel Roll Number: 1829020002184000000), Town of Uxbridge, Regional Municipality of Durham**

The Ministry of Natural Resources & Forestry (MNRF) was requested by the landowner to attend a July 26, 2017 site visit for wetland boundary delineations at 10850 Concession Road 4 in the Town of Uxbridge. At the site visit, the wetland boundaries were delineated based on staked lines undertaken by professional surveyors with staff from MNRF Aurora District, Grace and Associates Inc. and Lake Simcoe Region Conservation Authority in attendance. The wetland boundary was agreed to by all parties, at that time. In addition, the wetland boundary for the adjacent property to the north was mapped based on observations from the subject property and spring 2013 ortho-rectified aerial digital imagery from J. D. Barnes and Land Information Ontario.

The boundary delineations resulted in the Ministry including confluent wetland along the edge of the existing Wetland No. 8, part of the provincially significant Pefferlaw-Udora Wetland Complex. The addition also included a confluent wetland arm along a side tributary and a 0.33 hectare Wetland No. 42. The Ministry has incorporated the surveyed line and the mapping into the wetland complex.

The wetland arm and tributary stream of Wetland No. 23 and Wetland No. 42 occur in a groundwater discharge area. Along the tributary wetland and in Wetland No. 42 there are Eastern White Cedar (*Thuja occidentalis*) coniferous swamps (cS34), with the wetland arm also supporting a hardwood dominated mixed swamp (hS35-B), Reed Canary Grass (*Phalaris arundinacea*) marshes (neM3), Spotted Jewelweed (*Impatiens capensis*) ground cover marshes (gcM8) and an open water marsh with submerged plants (suW9).

Since Wetland No. 42 is less than two hectares in size, a rationale must be provided for its inclusion in the wetland complex. It has been included because it supports groundwater discharge, intervening wetland habitat between the surrounding larger Wetland No. 8 and it is hydrologically connected to other wetlands. In addition, Wetland No. 42 is only 41 metres from the neighbouring Wetland No. 8, well within the maximum of 750 metres as is required for any wetland in a wetland complex.

During the site visit it was noted that soil piles abutting the main part of Wetland No. 8 are intruding into the wetland edge. This site alteration to a wetland occurred without authorization. The Ministry will retain the altered area in the provincially significant Pefferlaw-Udora Wetland Complex. The Ministry recommends that the area of site alteration be restored back to its original elevation and wetland condition and that there be appropriate buffers between the soil piles and the wetland. The wetland boundary for this altered area was refined using aerial imagery from spring 2013.

Enclosed is a table of the wetland vegetation communities in and around the subject property. An attached map shows the wetlands and communities on an ortho-rectified digital photo base. This wetland update has been put into MNRF's web-accessible digital warehouse (LIO – Land Information Ontario) and can be accessed at <http://www.applio.lrc.gov.on.ca/lids/>. The information is stored under the "Wetland Unit" data class.

If you have any questions please do not hesitate to contact Steve Varga District Management Biologist by phone at 905-713-7370 or by email at [steve.varga@ontario.ca](mailto:steve.varga@ontario.ca)

Yours sincerely



Emily Funnell  
Resources Management Supervisor  
Aurora District  
Ministry of Natural Resources and Forestry

**1.2.2. Vegetation Communities - Pefferlaw-Udora Wetland Complex,  
2018 Update to Wetland No. 8 and Addition of Wetland No. 42**

Wet-land Unit #	Field # & Date	Map Code	Vegetation Forms	Dominant Species <sup>1</sup> , Secondary Species <sup>2</sup> (% cover by form) (Size in hectares; site type: R- riverine, P- palustrine with no inflow; soil type; ow- estimated percent permanent open water; presence of seepage; based on the July 26, 2017 observations of Steve Varga, Melanie Shapiera, Thivyah Sivasubramaniam & Austeja Vaskeviciute (OMNRF Aurora District))
8	2017-1	cS42	c*,ts,gc	c: Thuja occidentalis <sup>1</sup> (60); ts: Thuja occidentalis <sup>1</sup> , Rhamnus cathartica <sup>2</sup> (25); gc: Impatiens capensis <sup>1</sup> , Onoclea sensibilis <sup>1</sup> , Matteuccia struthiopteris <sup>2</sup> (40) (0.18 + 0.22 + 0.34 + 0.26 = 1.0; P/R; mesic organic; O-40+, seepage present; ow-5)
8	2017-3	neM3	gc,ne*	gc: various forbs (25); ne: Phalaris arundinacea <sup>1</sup> (80); (0.57 = 0.14 = 0.14 = 0.85; R/P; silt; seepage present; ow-5)
8	2017-2	gcM8	gc*,ne	gc: Impatiens capensis <sup>1</sup> , Onoclea sensibilis <sup>2</sup> (75); ne: Phalaris arundinacea <sup>1</sup> , Poa palustris <sup>2</sup> , Siccus atrovirens <sup>2</sup> , Carex vulpinoidea <sup>2</sup> (30); (0.56 + 0.07 = 0.63; R/P; silt; seepage present; ow-5)
8	2017-4	suW9	su*,ff	su: submerged plants (0.03; P; silt; ow-90)
42	2017-1	cS42	c*,ts,gc	c: Thuja occidentalis <sup>1</sup> (60); ts: Thuja occidentalis <sup>1</sup> , Rhamnus cathartica <sup>2</sup> (25); gc: Impatiens capensis <sup>1</sup> , Onoclea sensibilis <sup>1</sup> , Matteuccia struthiopteris <sup>2</sup> (40) (0.33; P; mesic organic; O-40+, seepage present; ow-0)

**Legend**

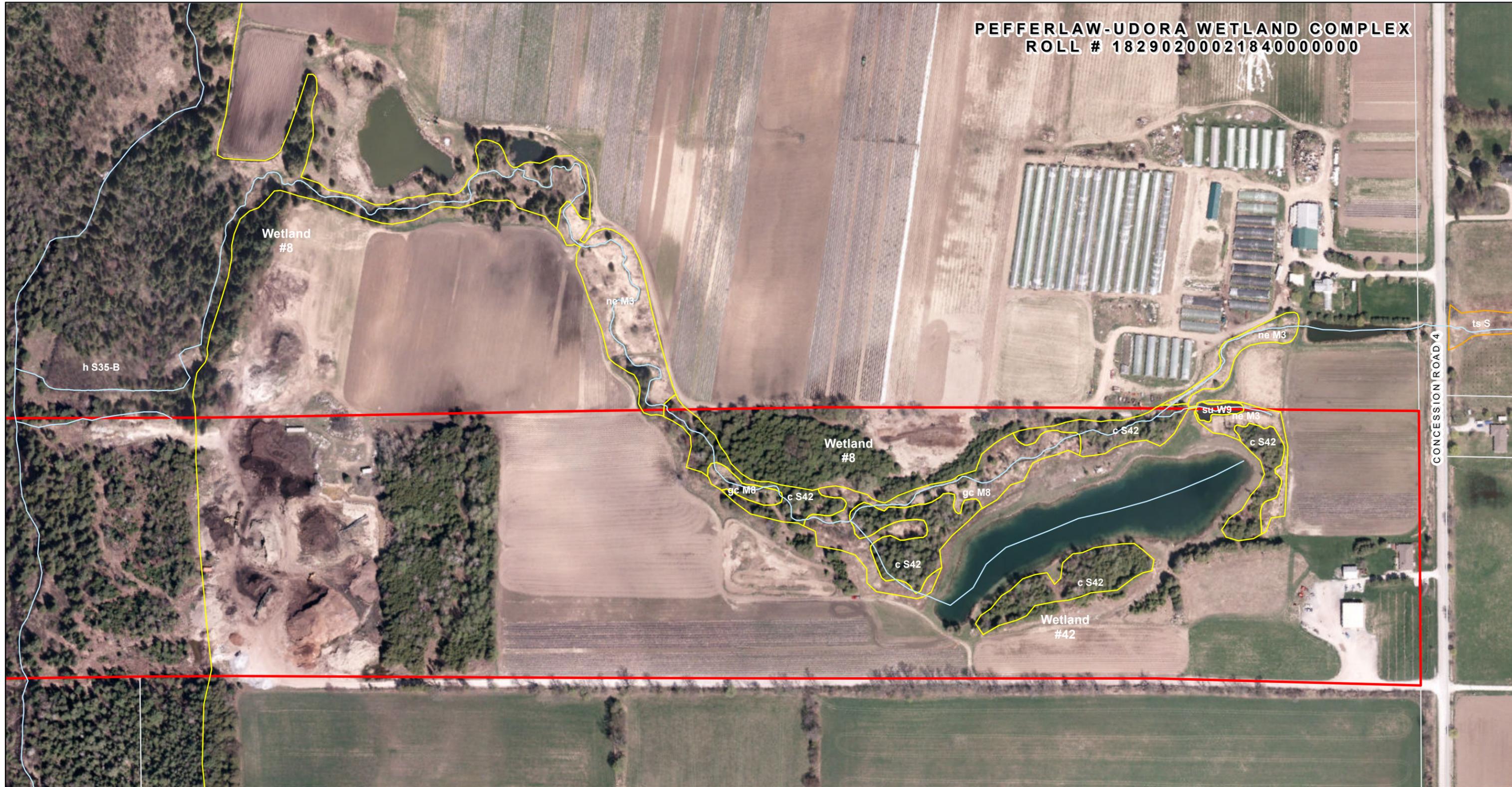
**Vegetation Forms:**

c- coniferous trees  
 ts- tall shrubs  
 gc- ground cover  
 ne- narrow-leaved emergents  
 su- submerged plants  
 \*- dominant form

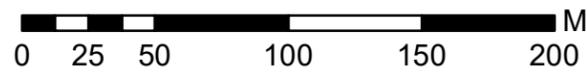
**Map Codes:**

M- marsh  
 S- swamp  
 W- open water marsh

**PEFFERLAW-UDORA WETLAND COMPLEX**  
**ROLL # 1829020002184000000**



Scale 1:2,700 (approx.)



- Legend**
- Watercourse
  - MNRF Evaluated Wetland
  - MNRF Identified Wetlands
  - Subject Lands
  - Parcel Fabric
  - Wetland Vegetation Community

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 Ministry of Natural Resources & Forestry - Aurora District 50 Bloomington Road West, Aurora, ON L4G 0L8

Base information derived from the Ontario Base Map, 1983 at a scale of 1:10,000 and the Natural Resources Values Information System (NRVIS).

**NOTE:**

The information displayed on this map has been compiled from various sources. While every effort has been made to accurately depict the information, this map should be viewed as illustrative only. Do not rely on it as being a precise indicator of routes, locations of features, nor as a guide to navigation.

For detailed information on natural features such as their location, size or status, the individual files held by the Aurora district office of the Ministry of Natural Resources & Forestry should be consulted.

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## APPENDIX C

### Significant Woodland Assessment





### Appendix C. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
<b>Woodland Size Criteria</b>		
<ul style="list-style-type: none"> <li>Size refers to the aerial (spatial) extent of the woodland (irrespective of ownership)</li> <li>Woodland areas are generally considered to be continuous even if intersected by narrow gaps 20m or less in width between crown edges.</li> <li>Size value is related to the scarcity of woodland in the landscape derived on a municipal basis with consideration of the differences in woodland coverage among physical sub-units (e.g., watersheds, biophysical regions).</li> <li>Size criteria should also account for differences in landscape-level physiography (e.g., moraines, clay planes) and community vegetation types.</li> </ul>	<p>Where woodlands cover:</p> <ul style="list-style-type: none"> <li>Is less than about 5% of land cover, woodlands 2ha in size or larger should be considered significant</li> <li>Is about 5-15% of land cover, woodlands 4ha in size or larger should be considered significant</li> <li>Is about 15-30% of land cover, woodlands 20ha in size or larger should be considered significant.</li> <li><b>Is about 30-60% of land cover, woodlands 50ha in size or larger should be considered significant</b></li> <li>Occupies more than 60% of the land, a minimum size is not suggested, and other factors should be considered</li> </ul>	<ul style="list-style-type: none"> <li>According to the Pefferlaw River Subwatershed Plan (LSRCA, 2012), there is 32.7% of forest cover in the subwatershed which contains the study area.</li> <li>Therefore, a woodland must be 20 ha in size or larger to be considered significant.</li> <li>The total area of Woodland Area B is approximately 8 ha.</li> <li><b>Therefore, based on Woodland Size Criteria, Woodland Area B would not be considered Significant in the context of the PPS.</b></li> </ul>
<b>Ecological Function Criteria</b>		
<b>Woodland Interior</b>		
<ul style="list-style-type: none"> <li>Interior Habitat more than 100m from the edge (as measured from the limits of a continuous woodland as defined above) is important for some species.</li> <li>For purposes of this criterion, a maintained public road would create an edge even if the opening was not wider than 20m and did not create a separate woodland.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>Any interior habitat where woodlands cover less than about 15% of the land cover</li> <li>2 ha or more of interior habitat where woodlands cover about 15-30% of the land cover</li> <li><b>8 ha or more of interior habitat where woodlands cover about 30-60% of the land cover</b></li> <li>20 ha or more of interior habitat where woodlands cover about 60% of the land cover</li> </ul>	<ul style="list-style-type: none"> <li>Woodland Area B contains no interior habitat.</li> <li><b>Therefore, Woodland Area B would not be considered Significant by the Woodland Interior Criteria in the context of the PPS.</b></li> </ul>
<b>Proximity to Other Woodlands or Other Habitats</b>		
<ul style="list-style-type: none"> <li>Woodlands that overlap, abut or are close to other significant natural heritage features or areas could be considered more valuable or significant than those that are not.</li> <li>Patches close to each other are of greater mutual benefit and value to wildlife.</li> </ul>	<p>Woodlands should be considered significant if:</p> <ul style="list-style-type: none"> <li>A portion of the woodland is located within a specific distance (e.g., 30m) of a significant natural feature or fish habitat likely receiving ecological benefit from the woodland and the entire woodland meets the minimum area threshold (e.g., 0.5-20ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Woodland Area B is separated from other natural areas by at least 100m.</li> <li><b>Therefore, Woodland Area B does not appear Significant by the Proximity to Other Woodlands or Other Habitats Criteria in the context of the PPS.</b></li> </ul>



### Appendix C. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
<p><b>Linkages</b></p> <ul style="list-style-type: none"> <li>Linkages are important connections providing for movement between habitats.</li> <li>Woodlands that are located between other significant features or areas can be considered to perform an important linkage function as “stepping stones” for movement between habitats.</li> </ul>	<p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> <li>Are located within a defined natural heritage system or provide a connecting link between two other significant features, each of which is within a specified distance (e.g., 120m) and meets minimum area thresholds (e.g., 1-20ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>Woodland Area B is over 100m away from the nearest identified natural heritage feature. It is not situated between other significant features in such a way as that it that would be considered to perform a linkage function.</li> <li><b>Therefore, based on Linkages Criteria, Woodland Area B would not be considered Significant in the context of the PPS.</b></li> </ul>
<p><b>Water Protection</b></p> <ul style="list-style-type: none"> <li>Source water protection is important.</li> <li>Natural hydrological processes should be maintained.</li> </ul>	<p>Woodlands should be considered significant if they:</p> <ul style="list-style-type: none"> <li>Are located within a sensitive or threatened watershed or a specific distance (e.g., 50m or top of valley bank if greater) or a sensitive groundwater discharge, sensitive recharge, sensitive headwater area, watercourse or fish habitat and meet minimum area thresholds (e.g., 0.5-10ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>There is no indication within the reviewed documentation or site conditions to suggest that Woodland Area B provides this function. Watercourses and fish habitat are located over 100m from the woodland. There was no indication within the reviewed mapping that the study area was within a source water protection area.</li> <li><b>Therefore, based on Water Protection Criteria, Woodland Area B would not be considered Significant in the context of the PPS.</b></li> </ul>
<p><b>Woodland Diversity</b></p> <ul style="list-style-type: none"> <li>Certain woodland species have had major reductions in representation on the landscape and may need special consideration.</li> <li>More native diversity is more valuable than less diversity.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>A naturally occurring composition of native forest species that have declined significantly south and east of the Canadian Shield and meet minimum area thresholds (e.g., 1-20ha, depending on circumstance)</li> <li>A high native diversity through a combination of composition and terrain (e.g., a woodland extending from a hilltop to a valley bottom or to opposite slopes) and meet minimum area thresholds (e.g., 2-20ha, depending on circumstance)</li> </ul>	<ul style="list-style-type: none"> <li>The woodland unit within the study area does not contain native forest tree species that have declined significantly (i.e., Butternut).</li> <li>The Cedar dominated and mixed Poplar/Cedar forest units located within the Woodland Area B are vegetation communities which would be considered native forest.</li> <li>Notwithstanding the fact that these are native vegetation communities, the species present within these communities are common on the landscape and not considered unique within the watershed.</li> <li><b>Therefore, Woodland Area B does not appear to meet this criterion to be considered Significant by the Woodland Diversity Criteria in the context of the PPS. For the purpose of this assessment it will be considered regardless.</b></li> </ul>



### Appendix C. Significant Woodland Assessment

CRITERIA	STANDARDS	ASSESSMENT
<b>Uncommon Characteristics Criteria</b>		
<ul style="list-style-type: none"> <li>Woodlands that are uncommon in terms of species composition, cover type, age or structure should be protected.</li> <li>Older woodlands (i.e., woodlands greater than 100 years old) are particularly valuable for several reasons, including their contributions to genetic, species and ecosystem diversity.</li> </ul>	<p>Woodlands should be considered significant if they have:</p> <ul style="list-style-type: none"> <li>A unique species composition or the site is represented by less than 5% overall in woodland area and meets minimum area thresholds (e.g., 0.5ha, depending on circumstance)</li> <li>A vegetation community with a provincial ranking of S1, S2 or S3 (as ranked by the NHIC and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance)</li> <li>Habitat (e.g., with 10 individual stems or 100m<sup>2</sup> of leaf coverage) of a rare, uncommon or restricted woodland plant species and meet minimum area thresholds (e.g., 0.5ha, depending on circumstance): vascular plant species for which the NHIC's Southern Ontario Coefficient of Conservatism is 8, 9 or 10; tree species of restricted distribution such as sassafras or rock elm; species existing only in a limited number of sites within the planning area</li> <li>Characteristics of older woodlands or woodlands with larger tree size structure in native species meet minimum area thresholds (e.g., 1-10ha, depending on circumstance): older woodlands could be defined as having 10 or more trees/ha greater than 100 years old; larger tree size structure could be defined as 10 or more trees/ha at least 50cm in diameter, or a basal area of 8 or more m<sup>2</sup>/ha in trees that are at least 40cm in diameter</li> </ul>	<ul style="list-style-type: none"> <li>Woodland Area B is not uncommon in terms of species composition, cover types (i.e., composition of ELC vegetation types), structure or age.</li> <li><b>Therefore, Woodland Area B does not appear Significant by the Uncommon Characteristics Criteria in the context of the PPS.</b></li> </ul>



### Appendix C. Significant Woodland Assessment

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

## APPENDIX D

### Significant Wildlife Habitat Assessment





**Appendix D - Tables 3.1-3.6. of Significant Wildlife Habitat Criteria Schedule for Ecoregion 6E**

**3.1 - Seasonal Concentrations of Areas of Animals**

Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Waterfowl Stopover and Staging Areas (Terrestrial)</b></p> <p><b>Rationale:</b> Habitat important to migrating waterfowl.</p>	American Black Duck Wood Duck Green-winged Teal Blue-winged Teal Mallard Northern Pintail Northern Shoveler American Wigeon Gadwall	CUM1 CUT1 Plus, evidence of annual spring flooding from melt water or run-off within these Ecosites.	Fields with sheet water during Spring (mid-March to May). <ul style="list-style-type: none"> <li>Fields flooding during spring melt and run-off provide important invertebrate foraging habitat for migrating waterfowl.</li> <li>Agricultural fields with waste grains are commonly used by waterfowl, these are not considered SWH unless they have spring sheet water available.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Anecdotal information from the landowner, adjacent landowners or local naturalist clubs may be good information in determining occurrence.</li> <li>Reports and other information available from Conservation Authorities</li> <li>Sites documented through waterfowl planning processes</li> <li>Field Naturalist Clubs</li> <li>Ducks Unlimited Canada</li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Area</li> </ul>	Studies carried out and verified presence of an annual concentration of any listed species, evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects" <ul style="list-style-type: none"> <li>Any mixed species aggregations of 100 or more individuals required.</li> <li>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.</li> <li>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).</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.</li> </ul>	Habitat in study area does not meet criteria related to wildlife species and annual spring flooding.
<p><b>Waterfowl Stopover and Staging Areas (Aquatic)</b></p> <p><b>Rationale:</b> Important for local and migrant waterfowl populations during the spring or fall migration or both periods combined. Sites identified are usually only one of a few in the eco-district.</p>	Canada Goose Cackling Goose Snow Goose American Black Duck Northern Pintail Northern Shoveler American Wigeon Gadwall Green-winged Teal Blue-winged Teal Hooded Merganser Common Merganser Lesser Scaup Greater Scaup Long-tailed Duck Surf Scoter White-winged Scoter Black Scoter Ring-necked duck Common Goldeneye Bufflehead Redhead Ruddy Duck Red-breasted Merganser Brant Canvasback Ruddy Duck	MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7	<ul style="list-style-type: none"> <li>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.</li> <li>These habitats have an abundant food supply (mostly aquatic invertebrates and vegetation in shallow water)</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Environment Canada.</li> <li>Naturalist clubs often are aware of staging/stopover areas.</li> <li>OMNRF Wetland Evaluations indicate presence of locally and regionally significant waterfowl staging.</li> <li>Sites documented through waterfowl planning processes</li> <li>Ducks Unlimited projects</li> <li>Element occurrence specification by Nature Serve: <a href="http://www.natureserve.org">http://www.natureserve.org</a></li> <li>Natural Heritage Information Centre (NHIC) Waterfowl Concentration Areas</li> </ul>	Studies carried out and verified presence of: <ul style="list-style-type: none"> <li>Aggregations of 100 or more of listed species for 7 days, results in &gt; 700 waterfowl use days.</li> <li>Areas with annual staging of ruddy ducks, canvasbacks, and redheads are SWH</li> <li>The combined area of the ELC ecosites and a 100m radius area is the SWH</li> <li>Wetland area and shorelines associated with sites identified within the Significant Wildlife Habitat Technical Guide Appendix K are significant wildlife habitat.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>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).</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #7 provides development effects and mitigation measures.</li> </ul>	Wetland habitat within the study area does not contain ponds or areas of standing water of suitable size to support such aggregation.



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Shorebird Migratory Stopover Area</b></p> <p><b>Rationale:</b> High quality shorebird stopover habitat is extremely rare and typically has a long history of use.</p>	<p>Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin</p>	<p>BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1 SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5</p>	<ul style="list-style-type: none"> <li>Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.</li> <li>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.</li> <li>Sewage treatment ponds and storm water ponds do not qualify as a SWH.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Western hemisphere shorebird reserve network.</li> <li>Canadian Wildlife Service (CWS) Ontario Shorebird Survey.</li> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist clubs</li> <li>Natural Heritage Information Center (NHIC) Shorebird Migratory Concentration Area</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more of listed species and &gt; 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)</li> <li>Whimbrel stop briefly (&lt;24hrs) during spring migration, any site with &gt;100 Whimbrel used for 3 years or more is significant.</li> <li>The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #8 provides development effects and mitigation measures.</li> </ul>	<p>Wetland habitat within the study area does not provide appropriate shoreline or aquatic habitat of suitable size to support such aggregation.</p>
<p><b>Raptor Wintering Area</b></p> <p><b>Rationale:</b> Sites used by multiple species, a high number of individuals and used annually are most significant</p>	<p>Rough-legged Hawk Red-tailed Hawk Northern Harrier American Kestrel Snowy Owl</p> <p><b>Special Concern:</b> Short-eared Owl Bald Eagle</p>	<p><u>Hawks/Owls:</u> Combination of ELC Community Series; need to have present one Community Series from each land class; Forest: FOD, FOM, FOC.  Upland: CUM; CUT; CUS; CUW.  <u>Bald Eagle:</u> Forest community Series: FOD, FOM, FOC, SWD, SWM or SWC on shoreline areas adjacent to large rivers or adjacent to lakes with open water (hunting area).</p>	<ul style="list-style-type: none"> <li>The habitat provides a combination of fields and woodlands that provide roosting, foraging and resting habitats for wintering raptors.</li> <li>Raptor wintering sites (hawk/owl) need to be &gt; 20 ha with a combination of forest and upland.</li> <li>Least disturbed sites, idle/fallow or lightly grazed field/meadow (&gt;15ha) with adjacent woodlands</li> <li>Field area of the habitat is to be wind swept with limited snow depth or accumulation.</li> <li>Eagle sites have open water, large trees and snags available for roosting</li> </ul> <p><u>Information Sources:</u></p> <ul style="list-style-type: none"> <li>OMNRF Ecologist or Biologist Field Naturalist Clubs</li> <li>Natural Heritage Information Center (NHIC) Raptor Winter Concentration Area</li> <li>Data from Bird Studies Canada</li> <li>Results of Christmas Bird Counts Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm the use of these habitats by:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The habitat area for an Eagle winter site is the shoreline forest ecosites directly adjacent to the prime hunting area</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #10 and #11 provides development effects and mitigation measures.</li> </ul>	<p>No meadow communities of sufficient size are located within the study area.</p>



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<b>Bat Hibernacula</b>  <b>Rationale:</b> 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)	<ul style="list-style-type: none"> <li>Hibernacula may be found in caves, mine shafts, underground foundations and Karsts.</li> <li>Active mine sites should not be considered as SWH</li> <li>The locations of bat hibernacula are relatively poorly known.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>Natural Heritage Information Center (NHIC) Bat Hibernaculum Ministry of Northern</li> <li>Development and Mines for location of mine shafts.</li> <li>Clubs that explore caves (e.g. Sierra Club)</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>All sites with confirmed hibernating bats are SWH.</li> <li>The habitat area includes a 200m radius around the entrance of the hibernaculum, for most development types and 1000m for wind farms</li> <li>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.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #1 provides development effects and mitigation measures.</li> </ul>	No caves, mine shafts, karst or underground foundations have been identified within the study area.
<b>Bat Maternity Colonies</b>  <b>Rationale:</b> 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	<ul style="list-style-type: none"> <li>Maternity colonies can be found in tree cavities, vegetation and often in buildings (buildings are not considered to be SWH).</li> <li>Maternity roosts are not found in caves and mines in Ontario.</li> <li>Maternity colonies located in Mature deciduous or mixed forest stands with &gt;10/ha large diameter (&gt;25cm dbh) wildlife trees</li> <li>Female Bats prefer wildlife tree (snags) in early stages of decay, class 1-3.</li> <li>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</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF for possible locations and contact for local experts</li> <li>University Biology Departments with bat experts.</li> </ul>	<ul style="list-style-type: none"> <li>Maternity Colonies with confirmed use by;</li> <li>&gt;10 Big Brown Bats<sup>®</sup></li> <li>&gt;5 Adult Female Silver-haired Bats</li> <li>The area of the habitat includes the entire woodland or a forest stand ELC Ecosite or an Ecoelement containing the maternity colonies.</li> <li>Evaluation methods for maternity colonies should be conducted following methods outlined in the “Bats and Bat Habitats: Guidelines for Wind Power Projects”.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #12 provides development effects and mitigation measures.</li> </ul>	<b>Wooded areas in the study area include SWM and FOM communities which could provide this function. These areas are being retained on the property. Assessment is included in the body of this report.</b>
<b>Turtle Wintering Areas</b>  <b>Rationale:</b> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.	Midland Painted Turtle  <b>Special Concern:</b> 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.	<ul style="list-style-type: none"> <li>For most turtles, wintering areas are in the same general area as their core habitat. Water must be deep enough not to freeze and have soft mud substrates.</li> <li>Over-wintering sites are permanent water bodies, large wetlands, and bogs or fens with adequate Dissolved Oxygen</li> <li>Man-made ponds such as sewage lagoons or storm water ponds should not be considered SWH.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>EIS studies carried out by Conservation Authorities.</li> <li>Local field naturalists and experts, as well as university herpetologists may also know where to find some of these sites.</li> <li>OMNRF Ecologist or Biologist</li> <li>Field Naturalist clubs</li> <li>Natural Heritage Information Center (NHIC)</li> </ul>	<ul style="list-style-type: none"> <li>Presence of 5 over-wintering Midland Painted Turtles is significant.</li> <li>One or more Northern Map Turtle or Snapping Turtle over-wintering within a wetland is significant.</li> <li>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.</li> <li>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)</li> <li>Congregation of turtles is more common where wintering areas are limited and therefore significant</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #28 provides development effects and mitigation measures for turtle wintering habitat.</li> </ul>	While this function is expected to be associated with the Pefferlaw – Udora Provincially Significant Wetland Complex, wetland habitat within the study area does not contain ponds or areas of standing water of suitable size to support such function. The watercourse is not expected to not support overwintering turtles.



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Reptile Hibernaculum</b></p> <p><b>Rationale:</b> Generally, sites are the only known sites in the area. Sites with the highest number of individuals are most significant.</p>	<p><b>Snakes:</b> Eastern Gartersnake Northern Watersnake Northern Red-bellied Snake Northern Brownsnake Smooth Green Snake Northern Ring-necked Snake Milksnake</p> <p><b>Special Concern:</b> Eastern Ribbonsnake</p> <p><b>Lizard:</b> <b>Special Concern</b> (Southern Shield population): Five-lined Skink</p>	<p>For all snakes, habitat may be found in any ecosite other than very wet ones. Talus, Rock Barren, Crevice, Cave, and Alvar sites may be directly related to these habitats.</p> <p>Observations or congregations of snakes on sunny warm days in the spring or fall is a good indicator.</p> <p>For Five-lined Skink, ELC Community Series of FOD and FOM and Ecosites: FOC1 FOC3</p>	<ul style="list-style-type: none"> <li>For snakes, hibernation takes place in sites located below frost lines in burrows, rock crevices and other natural or naturalized locations. The existence of features that go below frost line; such as rock piles or slopes, old stone fences, and abandoned crumbling foundations assist in identifying candidate SWH.</li> <li>Areas of broken and fissured rock are particularly valuable since they provide access to subterranean sites below the frost line</li> <li>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.</li> <li>Five-lined skink prefer mixed forests with rock outcrop openings providing cover rock overlaying granite bedrock with fissures.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>In spring, residents or landowners may have observed the emergence of snakes on their property (e.g. old dug wells).</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalists clubs</li> <li>University herpetologists</li> <li>Natural Heritage Information Center (NHIC)</li> <li>OMNRF ecologist or biologist may be aware of locations of wintering skinks</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of snake hibernacula used by a minimum of five individuals of a snake sp. or; individuals of two or more snake spp.</li> <li>Congregations of a minimum of five individuals of a snake sp. or; individuals of two or more snake spp. near potential hibernacula (e.g. foundation or rocky slope) on sunny warm days in Spring (Apr/May) and Fall (Sept/Oct)</li> <li><b>Note:</b> If there are Special Concern Species present, then site is SWH</li> <li><b>Note:</b> 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 near hibernacula. The feature in which the hibernacula is located plus a 30 m radius area is the SWH</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #13 provides development effects and mitigation measures for snake hibernacula.</li> <li>Presence of any active hibernaculum for skink is significant.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures for five-lined skink wintering habitat.</li> </ul>	<p><b>This function is expected to be associated with the Pefferlaw – Udora Provincially Significant Wetland Complex. Assessment is included in the body of this report.</b></p>
<p><b>Colonially -Nesting Bird Breeding Habitat (Bank and Cliff)</b></p> <p><b>Rationale:</b> 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 populations are declining in Ontario.</p>	<p>Cliff Swallow Northern Rough-winged Swallow (this species is not colonial but can be found in Cliff Swallow colonies)</p>	<p>Eroding banks, sandy hills, borrow pits, steep slopes, and sand piles. Cliff faces, bridge abutments, silos, barns.</p> <p>Habitat found in the following ecosites: CUM1 CUT1 CUS1 BLO1 BLS1 BLT1 CLO1 CLS1 CLT1</p>	<ul style="list-style-type: none"> <li>Any site or areas with exposed soil banks, undisturbed or naturally eroding that is not a licensed/permitted aggregate area.</li> <li>Does not include man-made structures (bridges or buildings) or recently (2 years) disturbed soil areas, such as berms, embankments, soil or aggregate stockpiles.</li> <li>Does not include a licensed/permitted Mineral Aggregate Operation.</li> </ul> <p><b>Information Sources</b></p> <ul style="list-style-type: none"> <li>Reports and other information available from Conservation Authorities.</li> <li>Ontario Breeding Bird Atlas</li> <li>Bird Studies Canada; <i>NatureCounts</i> <a href="http://www.birdscanada.org/birdmon/">http://www.birdscanada.org/birdmon/</a></li> <li>Field Naturalist Clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more nesting sites with 8 or more cliff swallow pairs and/or rough-winged swallow pairs during the breeding season.</li> <li>A colony identified as SWH will include a 50m radius habitat area from the peripheral nests</li> <li>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”</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #4 provides development effects and mitigation measures</li> </ul>	<p>Habitat in the study area does not meet key criteria to be considered significant – cliffs or banks were not observed within the study area.</p>



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Colonially -Nesting Bird Breeding Habitat (Tree/Shrubs)</b></p> <p><b>Rationale:</b> Large colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Great Blue Heron Black-crowned Night-Heron Great Egret Green Heron</p>	<p>SWM2 SWM3 SWM5 SWM6 SWD1 SWD2 SWD3 SWD4 SWD5 SWD6 SWD7 FET1</p>	<ul style="list-style-type: none"> <li>Nests in live or dead standing trees in wetlands, lakes, islands, and peninsulas. Shrubs and occasionally emergent vegetation may also be used.</li> <li>Most nests in trees are 11 to 15 m from ground, near the top of the tree.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, colonial nest records.</li> <li>Ontario Heronry Inventory 1991 available from Bird Studies Canada or NHIC (OMNRF).</li> <li>Natural Heritage Information Center (NHIC) Mixed Wader Nesting Colony</li> <li>Aerial photographs can help identify large heronries.</li> <li>Reports and other information available from CAs.</li> <li>MNRF District Offices.</li> <li>Local naturalist clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of 5 or more active nests of Great Blue Heron or other listed species.</li> <li>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 &lt;15.0ha with a colony is the SWH</li> <li>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</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #5 provides development effects and mitigation measures.</li> </ul>	<p>While appropriate ELC ecosites are present within the study area, nests for the listed species were not documented.</p>
<p><b>Colonially -Nesting Bird Breeding Habitat (Ground)</b></p> <p><b>Rationale:</b> Colonies are important to local bird population, typically sites are only known colony in area and are used annually.</p>	<p>Herring Gull Great Black-backed Gull Little Gull Ring-billed Gull Common Tern Caspian Tern Brewer's Blackbird</p>	<p>Any rocky island or peninsula (natural or artificial) within a lake or large river (two-lined on a 1:50,000 NTS map).</p> <p>Close proximity to watercourses in open fields or pastures with scattered trees or shrubs (Brewer's Blackbird)</p> <p>MAM1 – 6; MAS1 – 3; CUM CUT CUS</p>	<ul style="list-style-type: none"> <li>Nesting colonies of gulls and terns are on islands or peninsulas associated with open water or in marshy areas.</li> <li>Brewers Blackbird colonies are found loosely on the ground in low bushes in close proximity to streams and irrigation ditches within farmlands.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Breeding Bird Atlas, rare/colonial species records.</li> <li>Canadian Wildlife Service</li> <li>Reports and other information available from CAs.</li> <li>Natural Heritage Information Center (NHIC) Colonial Waterbird Nesting Area</li> <li>MNRF District Offices.</li> <li>Field Naturalist clubs.</li> </ul>	<p>Studies confirming:</p> <ul style="list-style-type: none"> <li>Presence of &gt; 25 active nests for Herring Gulls or Ring-billed Gulls, &gt;5 active nests for Common Tern or &gt;2 active nests for Caspian Tern.</li> <li>Presence of 5 or more pairs for Brewer's Blackbird.</li> <li>Any active nesting colony of one or more Little Gull, and Great Black-backed Gull is significant.</li> <li>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 &lt;3.0ha with a colony is the SWH</li> <li>Studies would be done during May/June when actively nesting. Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #6 provides development effects and mitigation measures.</li> </ul>	<p>Habitat does not meet key criteria to be considered significant – no rocky islands or peninsulas are present in the area.</p>



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Migratory Butterfly Stopover Areas</b></p> <p><b>Rationale:</b> Butterfly stopover areas are extremely rare habitats and are biologically important for butterfly species that migrate south for the winter.</p>	<p>Painted Lady Red Admiral</p> <p><u>Special Concern</u> Monarch</p>	<p>Combination of ELC Community Series; need to have present one Community Series from each land class:</p> <p><u>Field:</u> CUM CUT CUS</p> <p><u>Forest:</u> FOC FOD FOM CUP</p> <p>Anecdotally, a candidate site for butterfly stopover will have a history of butterflies being observed.</p>	<p>A butterfly stopover area will be a minimum of 10 ha in size with a combination of field and forest habitat present and will be located within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> <li>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</li> <li>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.</li> <li>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</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF (NHIC)</li> <li>Agriculture Canada in Ottawa may have list of butterfly experts.</li> <li>Field Naturalist Clubs</li> <li>Toronto Entomologists Association</li> <li>Conservation Authorities</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>The presence of Monarch Use Days (MUD) during fall migration (Aug/Oct). MUD is based on the number of days a site is used by Monarchs, multiplied by the number of individuals using the site. Numbers of butterflies can range from 100-500/day, significant variation can occur between years and multiple years of sampling should occur.</li> <li>Observational studies are to be completed and need to be done frequently during the migration period to estimate MUD.</li> <li>MUD of &gt;5000 or &gt;3000 with the presence of Painted Ladies or Red Admiral's is to be considered significant.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #16 provides development effects and mitigation measures.</li> </ul>	<p>Study area is not located within 5km of Lake Ontario and thus this habitat function is not applicable.</p>
<p><b>Landbird Migratory Stopover Areas</b></p> <p><b>Rationale:</b> Sites with a high diversity of species as well as high numbers are most significant.</p>	<p>All migratory songbirds.: Canadian Wildlife Service Ontario website.</p> <p>All migrant raptor species:</p> <p>Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors)</p>	<p>All Ecosites associated with these ELC Community Series;</p> <p>FOC FOM FOD SWC SWM SWD</p>	<p>Woodlots need to be &gt;10 ha in size and within 5 km of Lake Ontario.</p> <ul style="list-style-type: none"> <li>If multiple woodlands are located along the shoreline those Woodlands &lt;2km from Lake Ontario are more significant</li> <li>Sites have a variety of habitats; forest, grassland and wetland complexes.</li> <li>The largest sites are more significant</li> <li>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.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Bird Studies Canada</li> <li>Ontario Nature</li> <li>Local birders and naturalist club</li> <li>Ontario Important Bird Areas (IBA) Program</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Use of the habitat by &gt;200 birds/day and with &gt;35 spp with at least 10 bird spp. recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant.</li> <li>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"</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #9 provides development effects</li> </ul>	<p>Study area is not located within 5km of Lake Ontario and thus this habitat function is not applicable.</p>



Wildlife Habitat	Wildlife Species	Candidate SWH		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Deer Yarding Areas</b></p> <p><b>Rationale:</b> Winter habitat for deer is considered to be the main limiting factor for northern deer populations. In winter, deer congregate in “yards” to survive severe winter conditions. Deer yards typically have a long history of annual use by deer, yards typically represent 10-15% of an areas summer range.</p>	White-tailed Deer	<p>Note: OMNRF to determine this habitat. ELC Community Series providing a thermal cover component for a deer yard would include; FOM, FOC, SWM and SWC.</p> <p>Or these ELC Ecosites; CUP2 CUP3 FOD3 CUT</p>	<ul style="list-style-type: none"> <li>Deer yarding areas or winter concentration areas (yards) are areas deer move to in response to the onset of winter snow and cold. This is a behavioural response and deer will establish traditional use areas. The yard is composed of two areas referred to as Stratum I and Stratum II. Stratum II covers the entire winter yard area and is usually a mixed or deciduous forest with plenty of browse available for food. Agricultural lands can also be included in this area. Deer move to these areas in early winter and generally, when snow depths reach 20 cm, most of the deer will have moved here. If the snow is light and fluffy, deer may continue to use this area until 30 cm snow depth. In mild winters, deer may remain in the Stratum II area the entire winter.</li> <li>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%.</li> <li>OMNRF determines deer yards following methods outlined in “Selected Wildlife and Habitat Features: Inventory Manual”</li> <li>Woodlots with high densities of deer due to artificial feeding are not significant.</li> </ul>	<p>No Studies Required:</p> <ul style="list-style-type: none"> <li>Snow depth and temperature are the greatest influence on deer use of winter yards. Snow depths &gt; 40cm for more than 60 days in a typically winter are minimum criteria for a deer yard to be considered as SWH.</li> <li>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).</li> <li>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.</li> <li>If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area, then Movement Corridors are to be considered as outlined within this Schedule.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.</li> </ul>	No browse lines or signs of intensive browsing of shrubs/saplings characteristic of core deer yard habitat observed.
<p><b>Deer Winter Congregation Areas</b></p> <p><b>Rationale:</b> Deer movement during winter in the southern areas of Ecoregion 6E are not constrained by snow depth, however deer will annually congregate in large numbers in suitable woodlands to reduce or avoid the impacts of winter conditions.</p>	White-tailed Deer	<p>All Forested Ecosites with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Conifer plantations much smaller than 50 ha may also be used.</p>	<ul style="list-style-type: none"> <li>Woodlots will typically be &gt;100 ha in size. Woodlots &lt;100ha may be considered as significant based on MNRF studies or assessment.</li> <li>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.</li> <li>If deer are constrained by snow depth refer to the Deer Yarding Area habitat.</li> <li>Large woodlots &gt; 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.</li> <li>Woodlots with high densities of deer due to artificial feeding are not significant.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>MNRF District Offices</li> <li>LIO/NRVIS</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Deer management is an MNRF responsibility, deer winter congregation areas considered significant will be mapped by MNRF</li> <li>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</li> <li>Studies should be completed during winter (Jan/Feb) when &gt;20cm of snow is on the ground using aerial survey techniques, ground or road surveys. or a pellet count deer density survey.</li> <li>If a SWH is determined for Deer Wintering Area or if a proposed development is within Stratum II yarding area, then Movement Corridors are to be considered as outlined below.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #2 provides development effects and mitigation measures.</li> </ul>	Study area is in the northern part of Ecoregion 6E in an area that receives >20cm of snow accumulation per year. Thus, this criterion is not applicable.



3.2 - Rare Vegetation Communities

Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>Cliffs and Talus Slopes</b></p> <p><b>Rationale:</b> Cliffs and Talus Slopes are extremely rare habitats in Ontario.</p>	<p>Any ELC Ecosite within Community Series:</p> <p>TAO TAS TAT CLO CLS CLT</p>	<p>A Cliff is vertical to near vertical bedrock &gt;3m in height.</p> <p>A Talus Slope is rock rubble at the base of a cliff made up of coarse rocky debris</p>	<p>Most cliff and talus slopes occur along the Niagara Escarpment.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>The Niagara Escarpment Commission has detailed information on location of these habitats.</li> <li>OMNRF District</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Cliffs or Talus Slopes</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #21 provides development effects and mitigation measures.</li> </ul>	<p>Habitat in the study area does not meet key criteria to be considered significant.</p>
<p><b>Sand Barren</b></p> <p><b>Rationale:</b> Sand barrens are rare in Ontario and support rare species. Most Sand Barrens have been lost due to cottage development and forestry</p>	<p>ELC Ecosites:</p> <p>SBO1 SBS1 SBT1</p> <p>Vegetation cover varies from patchy and barren to continuous meadow (SBO1), thicket-like (SBS1), or more closed and treed (SBT1). Tree cover always ≤ 60%</p>	<p>Sand Barrens typically are exposed sand, generally sparsely vegetated and caused by lack of moisture, periodic fires and erosion. Usually located within other types of natural habitat such as forest or savannah. Vegetation can vary from patchy and barren to tree covered, but less than 60%.</p>	<p>A sand barren area &gt;0.5ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website.</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> </ul>	<ul style="list-style-type: none"> <li>Confirm any ELC Vegetation Type for Sand Barrens</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.)</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #20 provides development effects and mitigation measures.</li> </ul>	<p>Habitat in the study area does not meet key criteria to be considered significant.</p>
<p><b>Alvar</b></p> <p><b>Rationale:</b> Alvars are extremely rare habitats in Ecoregion 6E. Most alvars in Ontario are in Ecoregions 6E and 7E. Alvars in 6E are small and highly localized just north of the Palaeozoic-Precambrian contact.</p>	<p>ALO1 ALS1 ALT1 FOC1 FOC2 CUM2 CUS2 CUT2-1 CUW2</p> <p><b>Five Alvar Species:</b></p> <ol style="list-style-type: none"> <li><i>Carex crawei</i></li> <li><i>Panicum philadelphicum</i></li> <li><i>Eleocharis compressa</i></li> <li><i>Scutellaria parvula</i></li> <li><i>Trichostema brachiatum</i></li> </ol> <p>These indicator species are very specific to Alvars within Ecoregion 6E</p>	<p>An alvar is typically a level, mostly unfractured calcareous bedrock feature with a mosaic of rock pavements and bedrock overlain by a thin veneer of soil. The hydrology of alvars is complex, with alternating periods of inundation and drought. Vegetation cover varies from sparse lichen-moss associations to grasslands and shrublands and comprising a number of characteristic or indicator plants. Undisturbed alvars can be phyto- and zoogeographically diverse, supporting many uncommon or are relict plant and animal species. Vegetation cover varies from patchy to barren with a less than 60% tree cover</p>	<p>An Alvar site &gt; 0.5 ha in size.</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Alvars of Ontario (2000), Federation of Ontario Naturalists.</li> <li>Ontario Nature – Conserving Great Lakes Alvars.</li> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>OMNRF Districts</li> <li>Field Naturalist clubs.</li> <li>Conservation Authorities.</li> </ul>	<ul style="list-style-type: none"> <li>Field studies that identify four of the five <b>Alvar Indicator Species</b> at a Candidate Alvar site is Significant.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>The alvar must be in excellent condition and fit in with surrounding landscape with few conflicting land uses</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #17 provides development effects and mitigation measures.</li> </ul>	<p>Habitat in the study area does not meet key criteria to be considered significant.</p>



Rare Vegetation Community	Candidate SWH			Confirmed SWH	Assessment
	ELC Ecosite Code	Habitat Description	Detailed Information and Sources	Defining Criteria	
<p><b>Old Growth Forest</b></p> <p><b>Rationale:</b> 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.</p>	Forest Community Series: FOD FOC FOM SWD SWC SWM	Old Growth forests are characterized by heavy mortality or turnover of over-storey trees resulting in a mosaic of gaps that encourage development of a multi-layered canopy and an abundance of snags and downed woody debris.	Woodland areas 30 ha or greater in size or with at least 10 ha interior habitat assuming 100 m buffer at edge of forest.  <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF Forest Resource Inventory mapping</li> <li>OMNRF Districts.</li> <li>Field Naturalist clubs</li> <li>Conservation Authorities</li> <li>Sustainable Forestry Licence (SFL) companies will possibly know locations through field operations.</li> <li>Municipal forestry departments</li> </ul>	Field Studies will determine: <ul style="list-style-type: none"> <li>If dominant trees species of the are &gt;140 years old, then the area containing these trees is SWH</li> <li>The forested area containing the old growth characteristics will have experienced no recognizable forestry activities (cut stumps will not be present)</li> <li>The area of forest ecosites combined or an eco-element within an ecosite that contains the old growth characteristics is the SWH.</li> <li>Determine ELC vegetation types for the forest area containing the old growth characteristics</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #23 provides development effects and mitigation measures.</li> </ul>	Forest communities in study area do not meet key criteria related to woodland areas. Woodland habitat is not considered to be old growth forest.
<p><b>Savannah</b></p> <p><b>Rationale:</b> Savannahs are extremely rare habitats in Ontario.</p>	TPS1 TPS2 TPW1 TPW2 CUS2	A Savannah is a tallgrass prairie habitat that has tree cover between 25 – 60%.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.  <u>Information Sources</u> <ul style="list-style-type: none"> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>OMNRF Districts</li> <li>Field Naturalist clubs.</li> <li>Conservation Authorities.</li> </ul>	Field studies confirm one or more of the Savannah indicator species listed in Appendix N should be present. Note: Savannah plant spp. list from Ecoregion 6E should be used. <ul style="list-style-type: none"> <li>Area of the ELC Ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #18 provides development effects and mitigation measures.</li> </ul>	Habitat in the study area does not meet key criteria to be considered significant.
<p><b>Tallgrass Prairie</b></p> <p><b>Rationale:</b> Tallgrass Prairies are extremely rare habitats in Ontario.</p>	TPO1 TPO2	A Tallgrass Prairie has ground cover dominated by prairie grasses. An open Tallgrass Prairie habitat has < 25% tree cover.	No minimum size to site. Site must be restored or a natural site. Remnant sites such as railway right of ways are not considered to be SWH.  <u>Information Sources</u> <ul style="list-style-type: none"> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>OMNRF Districts</li> <li>Field Naturalist clubs.</li> <li>Conservation Authorities.</li> </ul>	Field studies confirm one or more of the Prairie indicator species listed in Appendix N should be present. Note: Prairie plant spp. list from Ecoregion 6E should be used <ul style="list-style-type: none"> <li>Area of the ELC Ecosite is the SWH.</li> <li>Site must not be dominated by exotic or introduced species (&lt;50% vegetative cover are exotic sp.).</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #19 provides development effects and mitigation measures.</li> </ul>	Habitat in the study area does not meet key criteria to be considered significant.
<p><b>Other Rare Vegetation Communities</b></p> <p><b>Rationale:</b> Plant communities that often contain rare species which depend on the habitat for survival.</p>	Provincially Rare S1, S2 and S3 vegetation communities are listed in Appendix M of the Significant Wildlife Habitat Technical Guide. Any ELC Ecosite Code that has a possible ELC Vegetation Type that is Provincially Rare is Candidate SWH.	Rare Vegetation Communities may include beaches, fens, forest, marsh, barrens, dunes and swamps.	ELC Ecosite codes that have the potential to be a rare ELC Vegetation Type as outlined in appendix M  The OMNRF/NHIC will have up to date listing for rare vegetation communities.  <u>Information Sources</u> <ul style="list-style-type: none"> <li>Natural Heritage Information Center (NHIC) has location information available on their website</li> <li>OMNRF Districts</li> <li>Field Naturalist clubs.</li> <li>Conservation Authorities.</li> </ul>	Field studies should confirm if an ELC Vegetation Type is a rare vegetation community based on listing within Appendix M of Significant Wildlife Habitat Technical Guide. <ul style="list-style-type: none"> <li>Area of the ELC Vegetation Type polygon is the SWH.</li> <li>Significant Wildlife Habitat Mitigation Support Tool Index #37 provides development effects and mitigation measures.</li> </ul>	No rare vegetation communities have been documented within the study area.



3.3 - Specialized Habitat for Wildlife

Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Waterfowl Nesting Area</b></p> <p><b>Rationale:</b> Important to local waterfowl populations, sites with greatest number of species and highest number of individuals are significant.</p>	<p>American Black Duck Northern Pintail Northern Shoveler Gadwall Blue-winged Teal Green-winged Teal Wood Duck Hooded Merganser Mallard</p>	<p>All upland habitats located adjacent to these wetland ELC Ecosites are Candidate SWH:</p> <p>MAS1 MAS2 MAS3 SAS1 SAM1 SAF1 MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 SWT1 SWT2 SWD1 SWD2 SWD3 SWD4</p> <p><b>Note: includes adjacency to Provincially Significant Wetlands</b></p>	<p>A waterfowl nesting area extends 120 m from a wetland (&gt; 0.5 ha) or a wetland (&gt;0.5ha) and any small wetlands (0.5ha) within 120m or a cluster of 3 or more small (&lt;0.5 ha) wetlands within 120 m of each individual wetland where waterfowl nesting is known to occur.</p> <ul style="list-style-type: none"> <li>Upland areas should be at least 120 m wide so that predators such as racoons, skunks, and foxes have difficulty finding nests.</li> <li>Wood Ducks and Hooded Mergansers utilize large diameter trees (&gt;40cm dbh) in woodlands for cavity nest sites.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ducks Unlimited staff may know the locations of particularly productive nesting sites.</li> <li>OMNRF Wetland Evaluations for indication of significant waterfowl nesting habitat.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirmed:</p> <ul style="list-style-type: none"> <li>Presence of 3 or more nesting pairs for listed species excluding Mallards, or;</li> <li>Presence of 10 or more nesting pairs for listed species including Mallards.</li> <li>Any active nesting site of an American Black Duck is considered significant.</li> <li>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"</li> <li>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.</li> <li>Significant Wildlife Habitat Technical Guide Index #25 provides development effects and mitigation measures.</li> </ul>	<p>While habitat in study area meets criteria to be considered candidate habitat for waterfowl nesting there is no indication that waterfowl would use the study area. No waterfowl species were documented within the study area. The wetland habitat will be retained. Thus, the communities that could provide this habitat function will not be altered.</p>
<p><b>Bald Eagle and Osprey Nesting, Foraging and Perching Habitat</b></p> <p><b>Rationale:</b> Nest sites are fairly uncommon in Eco-region 6E and are used annually by these species. Many suitable nesting locations may be lost due to increasing shoreline development pressures and scarcity of habitat.</p>	<p>Osprey <b>Special Concern</b> Bald Eagle</p>	<p>ELC Forest Community Series: FOD, FOM, FOC, SWD, SWM and SWC directly adjacent to riparian areas – rivers, lakes, ponds and wetlands</p>	<p>Nests are associated with lakes, ponds, rivers or wetlands along forested shorelines, islands, or on structures over water.</p> <ul style="list-style-type: none"> <li>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.</li> <li>Nests located on man-made objects are not to be included as SWH (e.g. telephone poles and constructed nesting platforms).</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Center (NHIC) compiles all known nesting sites for Bald Eagles in Ontario.</li> <li>MNRF values information (LIO/NRVIS) will list known nesting locations. Note: data from NRVIS is provided as a point and does not represent all the habitat.</li> <li>Nature Counts, Ontario Nest Records Scheme data.</li> <li>OMNRF Districts.</li> <li>Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented</li> <li>Reports and other information available from Conservation Authorities.</li> <li>Field Naturalists clubs</li> </ul>	<p>Studies confirm the use of these nests by:</p> <ul style="list-style-type: none"> <li>One or more active Osprey or Bald Eagle nests in an area.</li> <li>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.</li> <li>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.</li> <li>For a Bald Eagle the active nest and a 400-800 m radius around the nest is the SWH. Area of the habitat from 400-800m is dependent on-site lines from the nest to the development and inclusion of perching and foraging habitat</li> <li>To be significant a site must be used annually. When found inactive, the site must be known to be inactive for &gt; 3 years or suspected of not being used for &gt;5 years before being considered not significant.</li> <li>Observational studies to determine nest site use, perching sites and foraging areas need to be done from mid March to mid August.</li> <li>Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"</li> </ul>	<p>The listed species were not documented within the study area.</p>



Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
				<ul style="list-style-type: none"> <li>Significant Wildlife Habitat Technical Guide Index #26 provides development effects and mitigation measures</li> </ul>	
<b>Woodland Raptor Nesting Habitat</b>  <b>Rationale:</b> Nests sites for these species are rarely identified; these area sensitive habitats and are often used annually by these species.	Northern Goshawk Cooper's Hawk Sharp-shinned Hawk Red-shouldered Hawk Barred Owl Broad-winged Hawk	May be found in all forested ELC Ecosites. May also be found in SWC, SWM, SWD and CUP3	All natural or conifer plantation woodland/forest stands >30ha with >10ha of interior habitat. Interior habitat determined with a 200m buffer <ul style="list-style-type: none"> <li>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.</li> <li>In disturbed sites, nests may be used again, or a new nest will be in close proximity to old nest.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>OMNRF Districts.</li> <li>Check the Ontario Breeding Bird Atlas or Rare Breeding Birds in Ontario for species documented.</li> <li>Check data from Bird Studies Canada.</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>Presence of 1 or more active nests from species list is considered significant.</li> <li>Red-shouldered Hawk and Northern Goshawk – A 400m radius around the nest or 28 ha area of habitat is the SWH (the 28ha habitat area would be applied where optimal habitat is irregularly shaped around the nest)</li> <li>Barred Owl – A 200m radius around the nest is the SWH.</li> <li>Broad-winged Hawk and Coopers Hawk– A 100m radius around the nest is the SWH.</li> <li>Sharp-Shinned Hawk – A 50m radius around the nest is the SWH.</li> <li>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.</li> <li>Significant Wildlife Habitat Technical Guide Index #27 provides development effects and mitigation measures.</li> </ul>	Habitat in study area does not include interior habitat which is important to support this function. Further, the wetland habitat will be retained, thus the communities that could contribute to this habitat function will not be altered.
<b>Turtle Nesting Areas</b>  <b>Rationale:</b> These habitats are rare and when identified will often be the only breeding site for local populations of turtles.	Midland Painted Turtle  <u>Special Concern Species</u> 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	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>Sand and gravel beaches adjacent to undisturbed shallow weedy areas of marshes, lakes, and rivers are most frequently used.</li> </ul> <u>Information Sources</u> <ul style="list-style-type: none"> <li>Use Ontario Soil Survey reports and maps to help find suitable substrate for nesting turtles (well-drained sands and fine gravels).</li> <li>Check the Ontario Herpetofaunal Summary Atlas records or other similar atlases for uncommon turtles; location information may help to find potential nesting habitat for them.</li> <li>Natural Heritage Information Center (NHIC)</li> <li>Field Naturalist clubs</li> </ul>	Studies confirm: <ul style="list-style-type: none"> <li>Presence of 5 or more nesting Midland Painted Turtles</li> <li>One or more Northern Map Turtle or Snapping Turtle nesting is a SWH.</li> <li>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.</li> <li>Travel routes from wetland to nesting area are to be considered within the SWH as part of the 30-100m area of habitat.</li> <li>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.</li> </ul> Significant Wildlife Habitat Technical Guide Index #28 provides development effects and mitigation measures for turtle nesting habitat.	Suitable ELC ecosites were not documented within the study area.



Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Seeps and Springs</b></p> <p><b>Rationale:</b> Seeps/Springs are typical of headwater areas and are often at the source of coldwater streams.</p>	<p>Wild Turkey Ruffed Grouse Spruce Grouse White-tailed Deer Salamander spp.</p>	<p>Seeps/Springs are areas where ground water comes to the surface. Often, they are found within headwater areas within forested habitats. Any forested Ecosite within the headwater areas of a stream could have seeps/springs.</p>	<p>Any forested area (with &lt;25% meadow/field/pasture) within the headwaters of a stream or river system.</p> <ul style="list-style-type: none"> <li>Seeps and springs are important feeding and drinking areas especially in the winter will typically support a variety of plant and animal species</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Topographical Map.</li> <li>Thermography.</li> <li>Hydrological surveys conducted by Conservation Authorities and Ministry of the Environment, Conservation and Parks.</li> <li>Field Naturalists clubs and landowners.</li> <li>Municipalities and Conservation Authorities may have drainage maps and headwater areas mapped.</li> </ul>	<p>Field Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of a site with 2 or more seeps/springs should be considered SWH.</li> <li>The area of an 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.</li> <li>Significant Wildlife Habitat Technical Guide Index #30 provides development effects and mitigation measures</li> </ul>	<p>No seeps or springs were documented within the study area.</p>
<p><b>Amphibian Breeding Habitat (Woodland).</b></p> <p><b>Rationale:</b> These habitats are extremely important to amphibian biodiversity within a landscape and often represent the only breeding habitat for local amphibian populations</p>	<p>Eastern Newt Blue-spotted Salamander Spotted Salamander Gray Treefrog Spring Peeper Western Chorus Frog Wood Frog</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p> <p>Breeding pools within the woodland or the shortest distance from forest habitat are more significant because they are more likely to be used due to reduced risk to migrating amphibians</p>	<ul style="list-style-type: none"> <li>Presence of a wetland, pond or woodland pool (including vernal pools) &gt;500m<sup>2</sup> (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.</li> <li>Woodlands with permanent ponds or those containing water in most years until mid-July are more likely to be used as breeding habitat</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases) for records</li> <li>Local landowners may also provide assistance as they may hear spring-time choruses of amphibians on their property.</li> <li>OMNRF District.</li> <li>OMNRF wetland evaluations</li> <li>Field Naturalist clubs</li> <li>Canadian Wildlife Service</li> <li>Amphibian Road Call Survey</li> <li>Ontario Vernal Pool Association: <a href="http://www.ontariovernalpools.org">http://www.ontariovernalpools.org</a></li> </ul>	<p>Studies confirm;</p> <ul style="list-style-type: none"> <li>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.</li> <li>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.</li> <li>The habitat is the wetland area plus a 230m radius of woodland area. If a wetland area is adjacent to a woodland, a travel corridor connecting the wetland to the woodland is to be included in the habitat.</li> <li>Significant Wildlife Habitat Technical Guide Index #14 provides development effects and mitigation measures.</li> </ul>	<p><b>No surveys were undertaken to determine if Amphibian Breeding activity is present within the Pefferlaw – Udora PSW Complex associated with the study area. Thus, for the purpose of this assessment this function is assumed to be present associated with Woodland Area A. Assessment is included in the body of this report.</b></p>



Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH Defining Criteria	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources		
<p><b>Amphibian Breeding Habitat (Wetlands)</b></p> <p><b>Rationale:</b> Wetlands supporting breeding for these amphibian species are extremely important and fairly rare within Central Ontario landscapes.</p>	<p>Eastern Newt American Toad Spotted Salamander Four-toed Salamander Blue-spotted Salamander Gray Treefrog Western Chorus Frog Northern Leopard Frog Pickerel Frog Green Frog Mink Frog Bullfrog</p>	<p>ELC Community Classes SW, MA, FE, BO, OA and SA.</p> <p>Typically, these wetland ecosites will be isolated (&gt;120m) from woodland ecosites, however larger wetlands containing predominantly aquatic species (e.g. Bull Frog) may be adjacent to woodlands.</p>	<ul style="list-style-type: none"> <li>Wetlands &gt;500m<sup>2</sup> (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.</li> <li>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.</li> <li>Bullfrogs require permanent water bodies with abundant emergent vegetation.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Ontario Herpetofaunal Summary Atlas (or other similar atlases)</li> <li>Canadian Wildlife Service Amphibian Road Surveys and Backyard Amphibian Call Count.</li> <li>OMNRF Districts and wetland evaluations</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>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. <b>or</b>;</li> <li>Wetland with confirmed breeding Bullfrogs are significant.</li> <li>The ELC ecosite wetland area and the shoreline are the SWH.</li> <li>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.</li> <li>If a SWH is determined for Amphibian Breeding Habitat (Wetlands) then Movement Corridors are to be considered as outlined below.</li> <li>Significant Wildlife Habitat Technical Guide Index #15 provides development effects and mitigation measures.</li> </ul>	<p><b>No surveys were undertaken to determine if Amphibian Breeding activity is present within the Pefferlaw – Udora PSW Complex associated with the study area. Thus, for the purpose of this assessment this function is assumed to be present associated with Woodland Area A. Assessment is included in the body of this report.</b></p>
<p><b>Woodland Area-Sensitive Bird Breeding Habitat</b></p> <p><b>Rationale:</b> Large, natural blocks of mature woodland habitat within the settled areas of Southern Ontario are important habitats for area sensitive interior forest song birds.</p>	<p>Yellow-bellied Sapsucker Red-breasted Nuthatch Veery Blue-headed Vireo Northern Parula Black-throated Green Warbler Blackburnian Warbler Black-throated Blue Warbler Ovenbird Scarlet Tanager Winter Wren</p> <p><b>Special Concern:</b> Canada Warbler</p>	<p>All Ecosites associated with these ELC Community Series; FOC FOM FOD SWC SWM SWD</p>	<p>Habitats where interior forest breeding birds are breeding, typically large mature (&gt;60 yrs. old) forest stands or woodlots &gt;30 ha,</p> <ul style="list-style-type: none"> <li>Interior forest habitat is at least 200 m from forest edge habitat.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Local bird clubs.</li> <li>Canadian Wildlife Service (CWS) for the location of forest bird monitoring.</li> <li>Bird Studies Canada conducted a 3-year study of 287 woodlands to determine the effects of forest fragmentation on forest birds and to determine what forests were of greatest value to interior species</li> <li>Reports and other information available from Conservation Authorities.</li> </ul>	<p>Studies confirm:</p> <ul style="list-style-type: none"> <li>Presence of nesting or breeding pairs of 3 or more of the listed wildlife species.</li> <li>Note: any site with breeding Canada Warblers is to be considered SWH.</li> <li>Conduct field investigations in spring and early summer when birds are singing and defending their territories.</li> <li>Evaluation methods to follow “Bird and Bird Habitats: Guidelines for Wind Power Projects”</li> <li>Significant Wildlife Habitat Technical Guide Index #34 provides development effects and mitigation measures.</li> </ul>	<p>Woodland B with the study area does not meet the size and age criteria (<i>i.e.</i>, &gt;30 ha, &gt;60 yrs. old). <b>Woodland A associated with the wetland habitat will be retained. Notwithstanding, no surveys were undertaken to determine if Bird Breeding activity is present within the Pefferlaw – Udora PSW Complex associated with the study area. Thus, for the purpose of this assessment this function is assumed to be present associated with Woodland Area A. Assessment is included in the body of this report.</b></p>



3.4 - Habitat for Species of Conservation Concern (Not including Endangered or Threatened Species)

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



Wildlife Habitat	Wildlife Species	Candidate SHW		Confirmed SWH	Assessment
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria	
<p><b>Terrestrial Crayfish</b></p> <p><b>Rationale:</b> Terrestrial Crayfish are only found within SW Ontario in Canada and their habitats are very rare.</p>	<p>Chimney or Digger Crayfish; (<i>Fallicambarus fodiens</i>)</p> <p>Devil Crayfish or Meadow Crayfish; (<i>Cambarus Diogenes</i>)</p>	<p>MAM1 MAM2 MAM3 MAM4 MAM5 MAM6 MAS1 MAS2 MAS3 SWD SWT SWM</p> <p>CUM1 with inclusions of above meadow marsh or swamp ecosites can be used by terrestrial crayfish.</p>	<p>Wet meadow and edges of shallow marshes (no minimum size) should be surveyed for terrestrial crayfish.</p> <ul style="list-style-type: none"> <li>Constructs burrows in marshes, mudflats, meadows, the ground can't be too moist. Can often be found far from water.</li> <li>Both species are a semi-terrestrial burrower which spends most of its life within burrows consisting of a network of tunnels. Usually the soil is not too moist so that the tunnel is well formed.</li> </ul> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Information sources from "Conservation Status of Freshwater Crayfishes" by Dr. Premek Hamr for the WWF and CNF March 1998</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>Presence of 1 or more individuals of species listed or their chimneys (burrows) in suitable meadow marsh, swamp or moist terrestrial sites</li> <li>Area of ELC ecosite or an ecoelement area of meadow marsh or swamp within the larger ecosite area is the SWH.</li> <li>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</li> <li>Significant Wildlife Habitat Technical Guide Index #36 provides development effects and mitigation measures.</li> </ul>	<p>Chimneys were not documented within the wetland community.</p>
<p><b>Special Concern and Rare Wildlife Species</b></p> <p><b>Rationale:</b> These species are quite rare or have experienced significant population declines in Ontario.</p>	<p>All Special Concern and Provincially Rare (S1-S3, SH) plant and animal species. Lists of these species are tracked by the Natural Heritage Information Centre.</p>	<p>All plant and animal element occurrences (EO) within a 1 or 10km grid.</p> <p>Older element occurrences were recorded prior to GPS being available, therefore location information may lack accuracy</p>	<p>When an element occurrence is identified within a 1 or 10 km grid for a Special Concern or provincially Rare species; linking candidate habitat on the site needs to be completed to ELC Ecosites</p> <p><u>Information Sources</u></p> <ul style="list-style-type: none"> <li>Natural Heritage Information Centre (NHIC) will have Special Concern and Provincially Rare (S1-S3, SH) species lists with element occurrences data.</li> <li>NHIC Website "Get Information": <a href="http://nhic.mnr.gov.on.ca">http://nhic.mnr.gov.on.ca</a></li> <li>Ontario Breeding Bird Atlas</li> <li>Expert advice should be sought as many of the rare spp. have little information available about their requirements.</li> </ul>	<p>Studies Confirm:</p> <ul style="list-style-type: none"> <li>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.</li> <li>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 to be easily mapped and cover an important life stage component for a species e.g. specific nesting habitat or foraging habitat.</li> <li>Significant Wildlife Habitat Technical Guide Index #37 provides development effects and mitigation measures.</li> </ul>	<p><b>Special Concern species are expected to be associated with the Pefferlaw-Udora PSW Complex within the study area. Assessment is included in the body of this report.</b></p>



3.5 - Animal Movement Corridors

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



3.6 - Exceptions for Ecoregion 6E

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